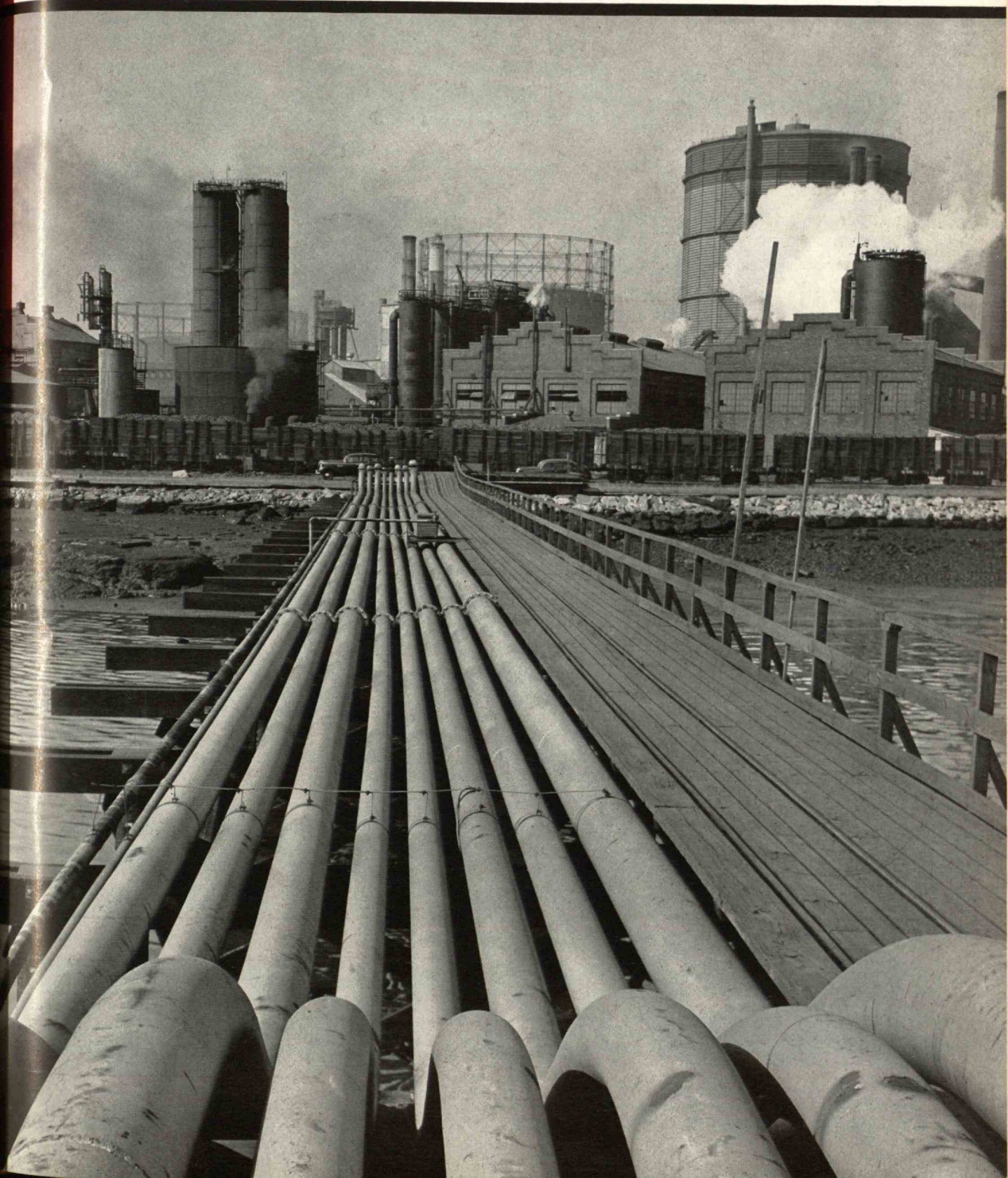


TECHNOLOGY

REVIEW

March 1957



technology review

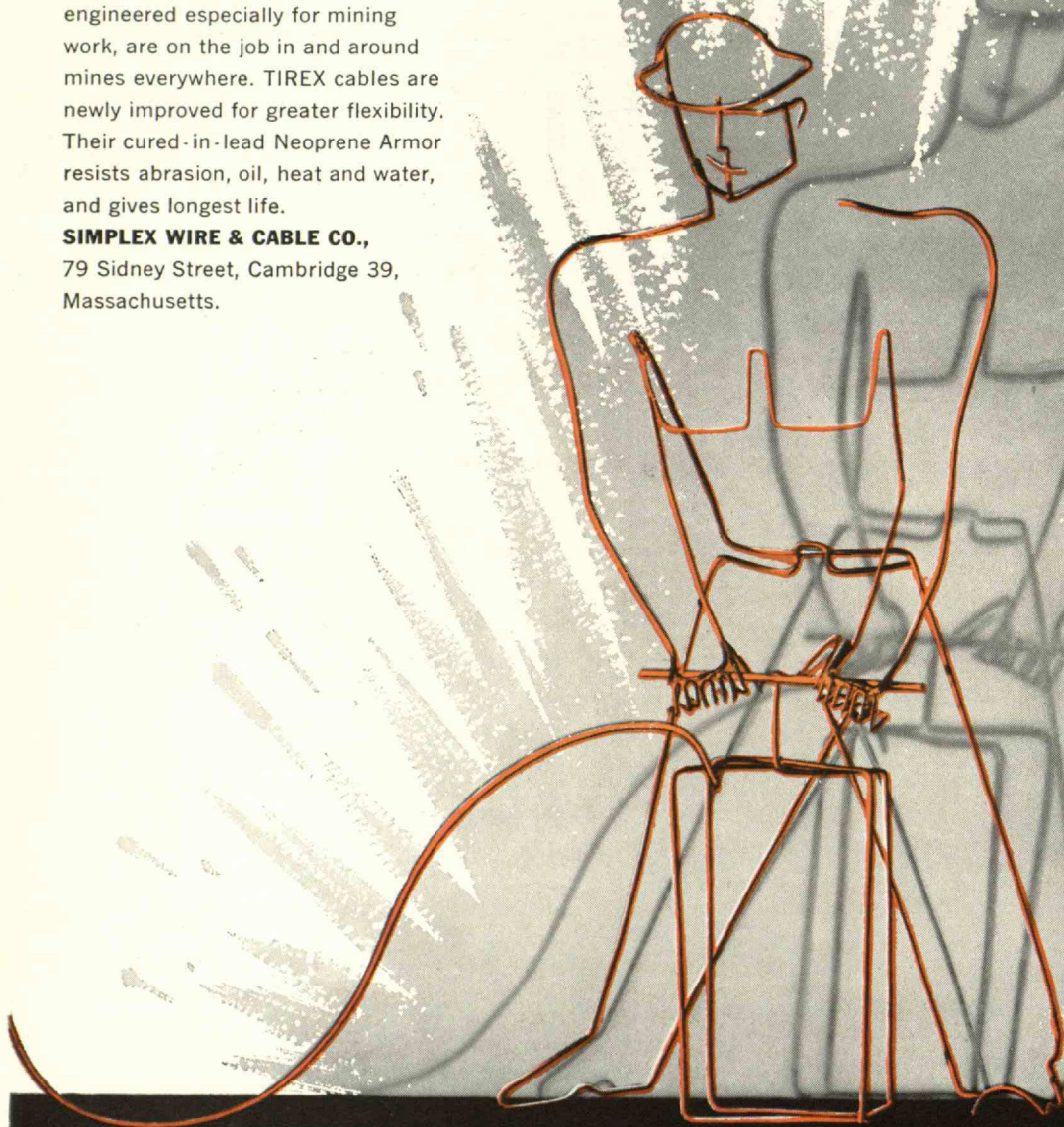
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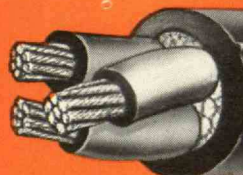


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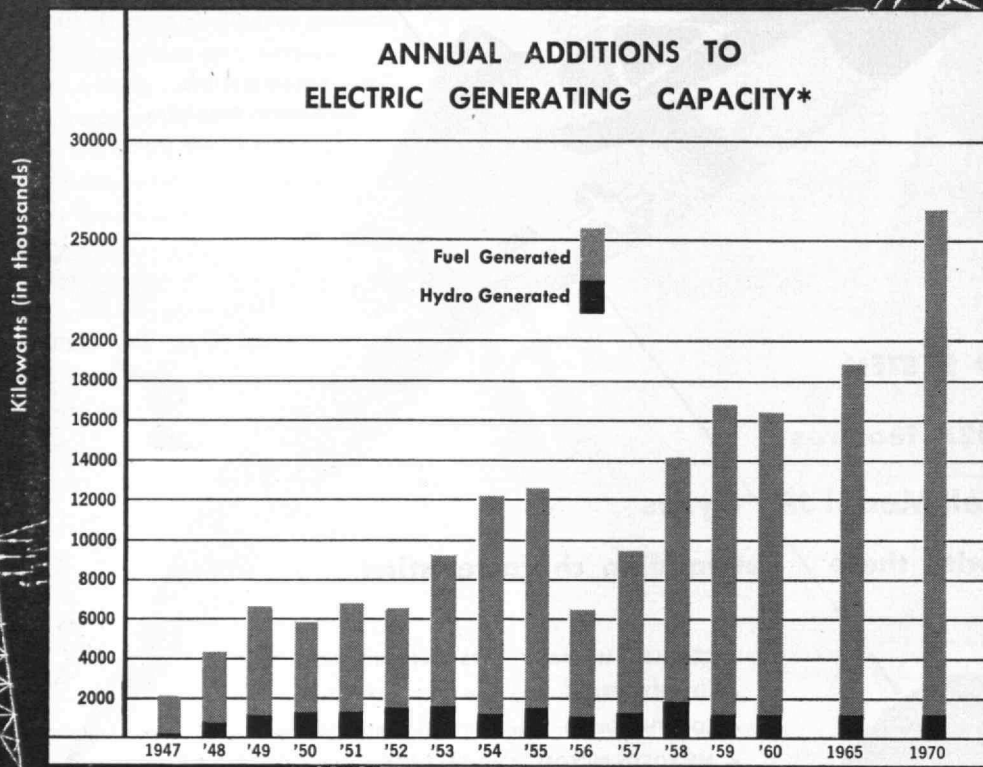
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*Based on figures published by ELECTRICAL WORLD

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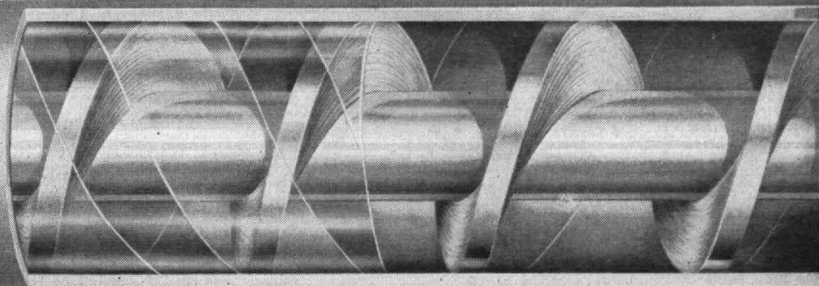
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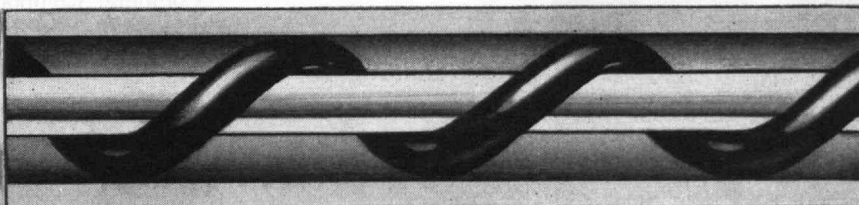
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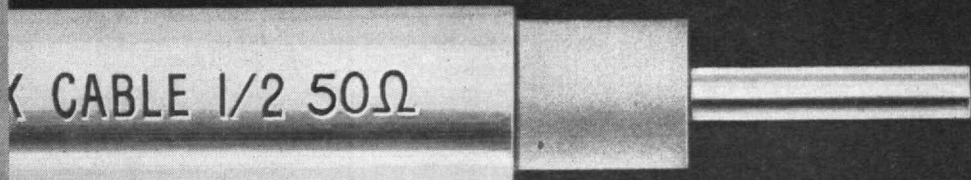
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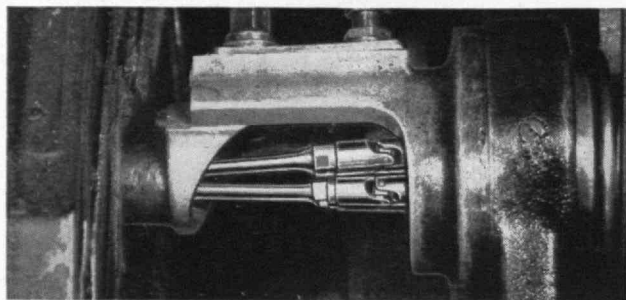
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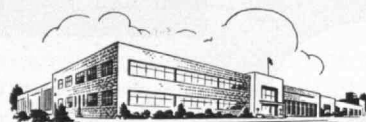
DIEFENDORF
GEARS

THE TABULAR VIEW

Education for Understanding. — What a nation's educational system should be depends upon the nation's way of life, as LEE A. DuBRIDGE pointedly relates (page 245). Dr. DuBridge reveals his lifelong career as scientist and educator in stating his belief that the basis of true education is the acquisition of the language of words and numbers, an ability to comprehend, and a desire to continue learning. "Education for Understanding" was originally presented as an address at the Ninth Annual Conference of the Institute of Food Technologists, Southern California Section, in Pasadena, on November 9, 1956. A native of Terre Haute, Ind., Dr. DuBridge received the A.B. degree in 1922 from Cornell College (Iowa) and the Ph.D. degree in 1926 from the University of Wisconsin. He was a fellow of the National Research Council, 1926-1928 and then taught physics at Washington University where he was assistant professor in 1928-1933 and associate professor, 1933-1934. From 1934 to 1946 he was professor of physics and chairman of the Department at the University of Rochester, and was also Dean of the Faculty of Arts and Sciences there from 1938-1942. From 1940 to 1945 he was director of the Radiation Laboratory at M.I.T. Since 1946 Dr. DuBridge has been president of the California Institute of Technology.

Low-Temperature Switch. — A new circuit element has recently been added to useful devices from which large-scale computers can be designed. The new device, called the cryotron, is essentially a conductor operated at temperatures approaching that of absolute zero where superconductivity is achieved. The cryotron, described on page 249 of The Review, was developed by DUDLEY BUCK, '52. For his paper, "The Cryotron—A Superconductive Computer Component," in the April, 1956, issue of the *Proceedings of the Institute of Radio Engineers*, Mr. Buck will receive the Browder J. Thompson Memorial Prize of the I.R.E. Mr. Buck was born in San Francisco and received his early education in Santa Barbara. He received the B.S. degree in electrical engineering from the University of Washington in 1948, and then served two years as communications officer with the U.S. Navy.

(Concluded on page 230)



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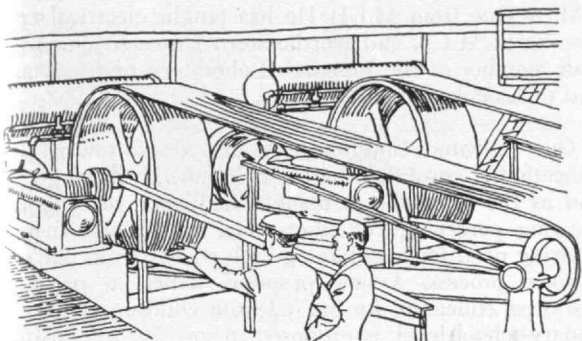
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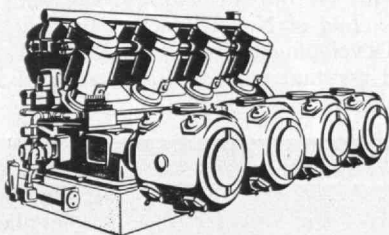
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THE TABULAR VIEW

(Concluded from page 228)

He became a research assistant in the Institute's Servomechanism Laboratory in 1950 and in 1952 received the S.M. degree from M.I.T. He has taught electrical engineering at M.I.T. and Northeastern University, and is a staff member of the Research Laboratory of Electronics and of Lincoln Laboratory.

Our Talented Children.—As the trend toward free education at constantly higher academic levels surges on, and as the tax dollar is being called upon to support a growing percentage of educational institutions, there is growing need for maintaining high standards in our educational process. A new proposal, aimed at providing first-class education for our talented children at the secondary-school level, is proposed (page 250) by ADMIRAL H. G. RICKOVER. The Review's study is condensed from an address given at a luncheon sponsored by the Thomas Alva Edison Foundation, Inc. in East Orange, N.J., on November 20, 1956. Admiral Rickover is a graduate of the United States Naval Academy with the Class of 1922. Since then he has advanced from ensign to rear admiral, and in 1930 became qualified submariner. He was assigned to the atomic submarine project with the Atomic Energy Commission at Oak Ridge, 1946-1947, and since 1947 has been with the Bureau of Ships. Currently Admiral Rickover is chief of Naval Reactors Branch, Division of Reactor Development of the U.S. Atomic Energy Commission, and assistant chief of the Bureau of Ships for Nuclear Propulsion.



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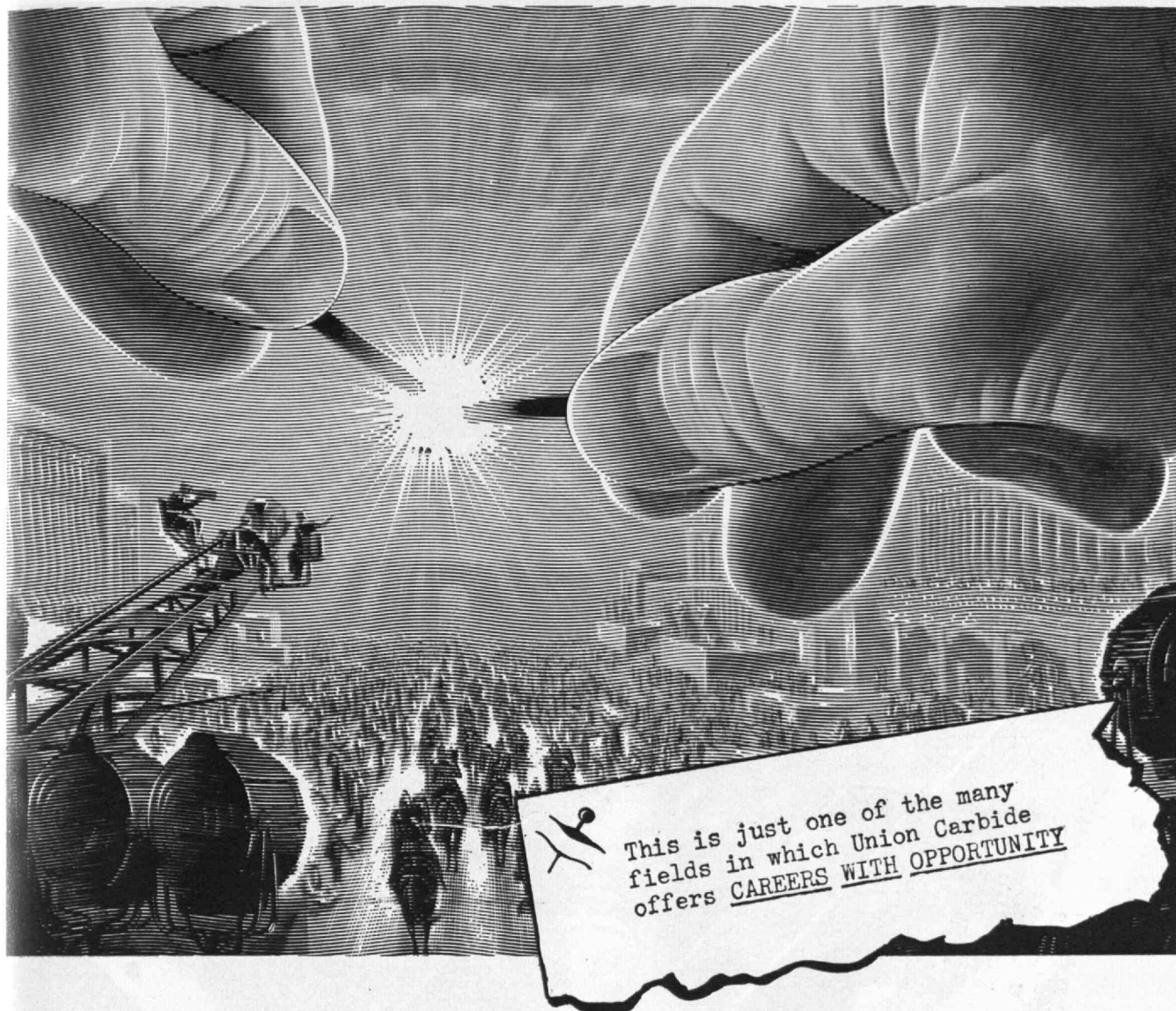
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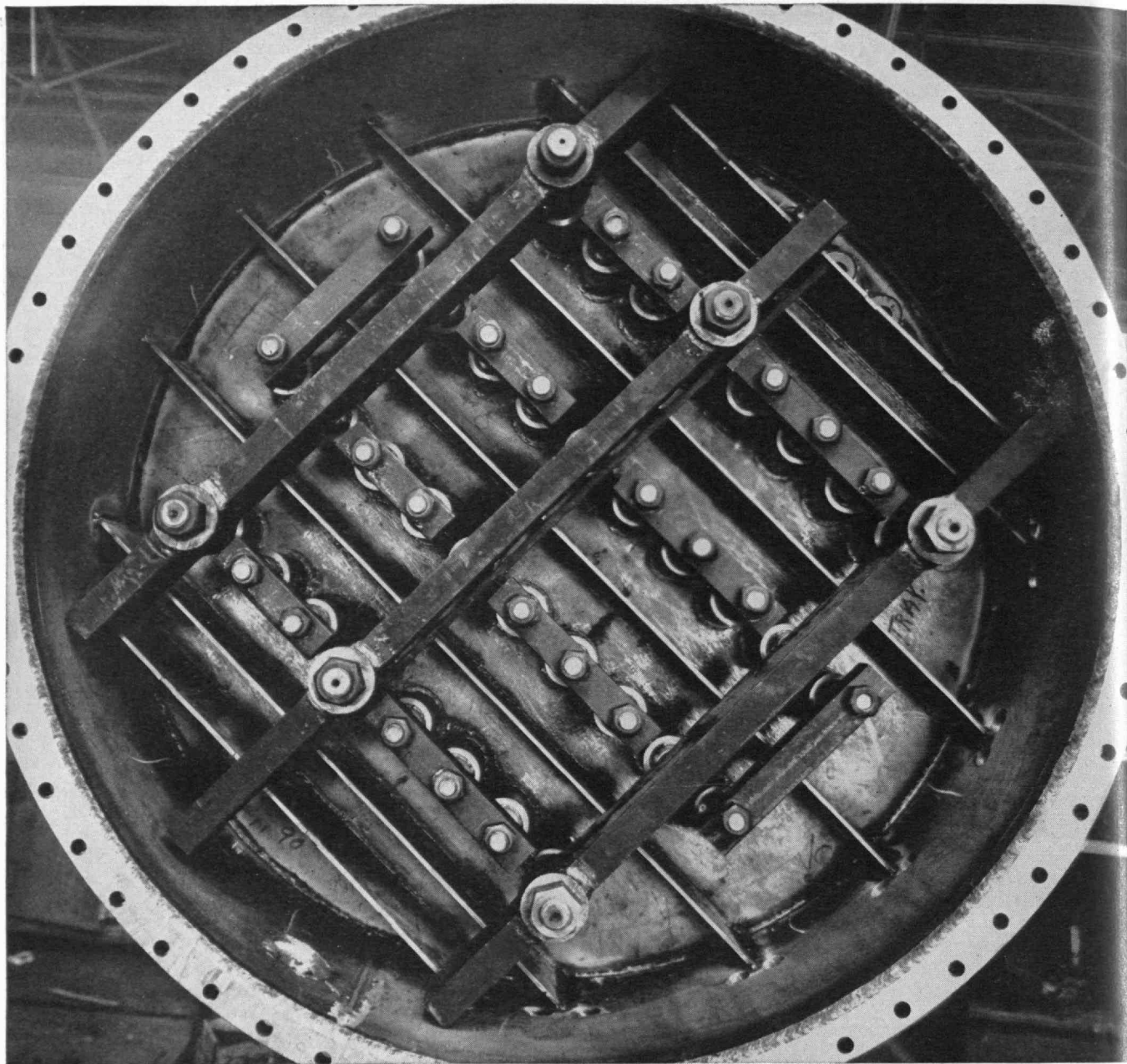
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THERE'S MORE TO AN EGG THAN THE SHELL...

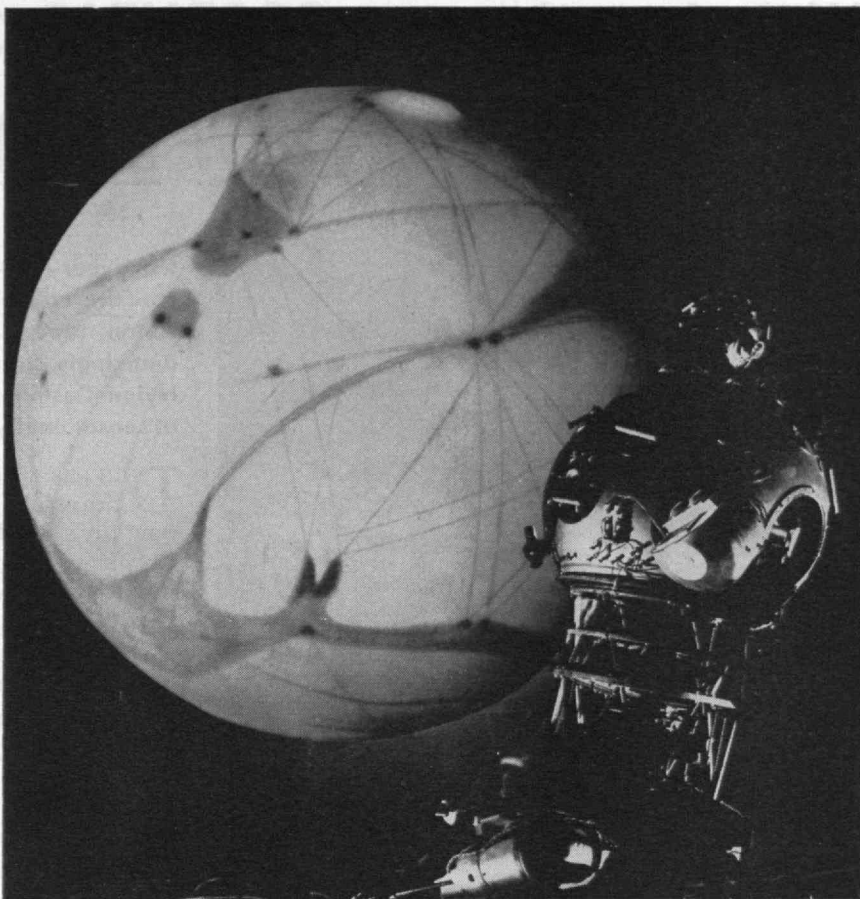
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THE TECHNOLOGY REVIEW



Kenneth E. Bell, '17
Crusader Castle, near Homs, Syria

Technology Review

TITLE REGISTERED, U. S. PATENT OFFICE

Edited at the Massachusetts Institute of Technology

VOL. 59, NO. 5

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EDITOR:
B. Dudley

BUSINESS MANAGER:
R. T. Jope

CIRCULATION MANAGER:
D. P. Severance

EDITORIAL ASSOCIATES:
Paul Cohen
J. R. Killian, Jr.
F. W. Nordsiek
J. J. Rowlands

EDITORIAL STAFF:
Ruth King

BUSINESS STAFF:
Eileen E. Klimowicz
Madeline R. McCormick

PUBLISHER:
H. E. Lobdell

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The Technology Review



VOL. 59, No. 5

MARCH, 1957

The Trend of Affairs

The Alumni Ballot

■ In accordance with a March custom, and this year on the 25th of that variable month weatherwise, M.I.T. Alumni will receive ballots bearing the names of nominees to hold office in the Alumni Association, to become alumni term members on the Institute's Corporation, to serve as members of the National Nominating Committee from Districts 3, 6, and 7, and to participate as class representatives on the Alumni Council. There is no variability, however, in the continued loyalty and keen interest of the nominees.

Gilbert M. Roddy, '31, XV, has been nominated to serve as president of the Association for the year beginning July 1, 1957. Mr. Roddy is vice-president of the Boston Manufacturers Mutual Insurance Company and Mutual Boiler and Machinery Insurance Company which is located in Boston. His industrial achievements and Institute activities are recorded below his photograph.

Nominated to serve as a vice-president for a two-year term, effective July 1, 1957, is D. Reid Weedon, Jr., '41, IX-B, who is vice-president of Arthur D. Little, Inc., of Cambridge. He has gained familiarity with Association affairs through membership on the Alumni Council since 1952, and as a member of the Executive Committee in 1955-1957. He has been a member of the Committee on Nominations for Departmental Visiting Committees during 1954-1957, serving as chairman in 1956-1957. In 1951 Mr. Weedon was named Class Agent, as well as chairman of the Tenth Reunion for his class. For Alumni Day, Mr. Weedon was deputy chairman in 1956, and chairman in 1957. Since 1954 he has been director of the Phi Beta Epsilon Corporation, serving as chairman of the House Committee. Holding membership in the Algonquin Club, Chemists Club, Duxbury Yacht Club, and the American Marketing Association, he also serves on the Foreign Affairs Committee of the Cambridge Chamber of Commerce, and the Packaging Committee of the National Security Industrial Association.

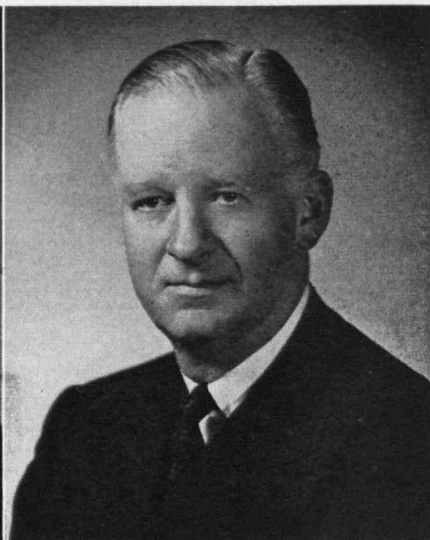


For President 1957-1958 . . .

Nominated for the presidency of the Alumni Association for the fiscal year 1957-1958 is Gilbert M. Roddy, '31, XV. Mr. Roddy is vice-president of the Boston Manufacturers Mutual Insurance Company and Mutual Boiler and Machinery Insurance Company in Boston. Mr. Roddy was vice-president of the Association for 1954-1956, chairman of the Alumni Day Banquet in 1955, Class Representative on the Alumni Council since 1936, Class Agent, 1940-1942, and member of the Advisory Council on Walker Memorial in 1935-1938. He has served on many Alumni Association committees and had an active part in the Institute's \$20,000,000 Development Fund Drive.

Active in community affairs, Mr. Roddy is president and director of the Emerson Hospital, Concord. He is a trustee of the Boston Museum of Science, Wheaton College, Home Savings Bank of Boston, Phi Gamma Delta, and director of the Concord Community Chest. He is a member of the Longwood Cricket Club, Concord Country Club, the Commercial Club of Boston, the Merchants Club, and the Newcomen Society.

◀ Music room of the Charles Hayden Memorial Library provides students with pleasant opportunities for study or relaxation, as shown on the opposite page.



Eastman Kodak Company

M.I.T. Photo

Newly appointed alumni term members to serve on the M.I.T. Corporation are (left to right): Charles A. Chayne, '19, Vice-president in charge of Engineering Staff, General Motors Corporation; Clarence L. A. Wynd, '27, Vice-president, Eastman Kodak Company and Assistant General Manager of the Kodak Park Works; and Theodore T. Miller, '22, President of the Polymer Chemicals Division, W. R. Grace and Company, and President of the Alumni Association for 1956-1957.

The two Alumni nominated by the National Nominating Committee as members of the Executive Committee for two-year terms, beginning next July, are: Raymond A. St-Laurent, '21, X, and William L. Taggart, Jr., '27, XV. Mr. St-Laurent is vice-president of Rogers Corporation, Rogers, Conn., and Mr. Taggart is executive vice-president of Dewey and Almy Chemical Company (Division of W. R. Grace and Company), Cambridge.

Nominees as alumni term members on the M.I.T. Corporation, to serve for five years, are: Charles A. Chayne, '19, II, Vice-president in charge of the Engineering Staff of General Motors Corporation; Theodore T. Miller, '22, XV (who is serving as Association President for 1956-1957), President, Polymer Chemicals Division, W. R. Grace and Company, New Jersey; and Clarence L. A. Wynd, '27, X-A, who is vice-president of the Eastman Kodak Company and assistant general manager of the Kodak Park Works in Rochester.

The present membership of the National Nominating Committee includes: Horatio L. Bond, '23, chairman, Robert C. Erb, '17, Clayton D. Grover, '22, William S. Brackett, '23, Cecil H. Green, '23, Max L. Ilfeld, '24, David J. Sullivan, '24, Morgan Collins, '27, Ralph B. Johnson, '27, and Harold Chestnut, '39.

Nominees as members of the National Nominating Committee (with one Alumnus to be elected from each District) to serve for three years are: *District 3* - Springfield, Mass. - Bissell Alderman, '35, IV; Pittsfield, Mass. - Frank S. Gardner, '38, III, VIII, IX; *District 6* - Philadelphia, Pa. - Herbert W. Anderson, '15, II - Richmond, Va. - Richard H. Catlett, '17, X-A; Washington, D.C. - Robert K. Thulman, '22, XV; Bethlehem, Pa. - Michael V. Herasimchuk, '39, XIX; Pittsburgh, Pa. - Henry Avery, '41, X; *District 7* - Columbus, Ohio - Edmund D. Ayres, '22, VI-A; Toledo, Ohio - Herbert A. Barnby, '23, V; Chicago, Ill. - Philip L. Coleman, '23, XV; Louisville, Ky. - Albert L. Entwistle, '26, XV; Cleveland, Ohio - William C. Sessions, '26, XV.

Redfield Proctor: 1879-1957

■ Redfield Proctor, '02, ex-governor of Vermont, chairman of the board of Vermont Marble Company, and member of the M.I.T. Corporation, died in Proctor, Vt., on February 5, at the age of 77.

In addition to his distinguished public service and industrial leadership, Redfield Proctor was a wise supporter of our educational institutions. He was an active alumnus, a diligent life member of the Corporation, and a warm and ardent supporter of the Institute. Students, Faculty, and administrative officers knew him with love and affection, and feel a deep sense of loss at his passing.

Prominent in New England business, political, and educational service, Dr. Proctor was one of the founders and second president of the New England Council, served in the Vermont General Assembly and State Senate before his election as governor in 1923, was president of the Vermont Marble Company from 1935 to 1952, and was a lifetime trustee of Middlebury College, and the 40th president of the M.I.T. Alumni Association in 1933-1934. He held honorary degrees from Middlebury College, Norwich University, and the University of Vermont, and was trustee and director of many civic, educational, charitable, and business organizations.

Popular Science Lectures

■ Of the two Popular Science Lectures to be presented in 1957, under the auspices of the Society of Arts, that entitled "Why Metals Corrode" will be delivered on March 24 by Herbert H. Uhlig, '32, Professor of Metallurgy. The series opened on February 10 with the lecture entitled "Count Rumford, the Father of Applied Physics" by Sanborn C. Brown, 10-44, Associate Professor of Physics.

The Popular Science Lectures are delivered on Sunday afternoons at M.I.T. Tickets may be obtained, free of charge, upon application to the Society of Arts, Room 4-434 at the Institute.

To Head Biology Department

■ Irwin W. Sizer has been appointed head of the Department of Biology at the Institute, it was announced in January by George R. Harrison, Dean of the School of Science at M.I.T. Professor Sizer, who has taught physiology and biochemistry at M.I.T. since 1935, had been serving as executive officer and acting head of the Department. His portrait appears on page 240.

Dr. Sizer is well known for his studies of the fundamental properties and medical applications of enzymes, complicated organic substances that speed up chemical transformations. Slowing down, or inhibiting, enzyme action is one way of controlling disease. Dr. Sizer is currently studying the use of enzyme inhibitors as antibiotics and in chemotherapy.

"The effects of anti-cancer agents, insecticides, and drugs," says Dr. Sizer, "can often be explained in terms of enzyme inhibition. Moreover, the design and synthesis of new enzyme inhibitors offers great promise for the control and cure of disease in the immediate future."

Professor Sizer is also doing research on the medical aspects of enzymes as related to the treatment of burns. Experimental work with enzymes shows they may be especially useful in getting severe burn areas ready for skin grafts.

"Work on burns is receiving marked attention," says Professor Sizer, "because burn problems are expected to be severe if we should ever undergo atomic attack."

Dr. Sizer also has studied extensively enzymes which are concerned with the clotting of blood, and others which bring about the oxidation and destruction of the toxic irritants of poison ivy. In addition, he has worked on the spectroscopy and biochemistry of collagen and has done research in connection with the use of sheep gut, of which collagen is the principal constituent, for surgical sutures.

M.I.T.'s Department of Biology, which Dr. Sizer now heads, is unique among academic Departments for its concentration on modern analytical biology. The Department is doing pioneering research in many areas of biophysics and biochemistry. It is also a world center in biological research using the electron microscope, an instrument which makes possible the photography and study of structures approaching the molecule in size.

A native of Bridgewater, Mass., Dr. Sizer received his A.B. from Brown University in 1931 and his Ph.D. from Rutgers University in 1935. He came to M.I.T. in 1935 as instructor and research associate in biology and public health, became an associate professor in 1942, and executive officer of the Department in 1954. He was named acting head of the Department in 1955 and was appointed full professor in 1956.

He has been in charge of the graduate program for biology students at M.I.T. for many years and has been active on national committees for the improvement of educational opportunities and standards in the field of biology. In 1951, he was a visiting lecturer at Brown University.

Dr. Sizer is a fellow of the American Academy of Arts and Sciences and a member of the American Society of Biological Chemists, the American Physiological Society, and American Society of Zoologists.

On the Horizon

March 7, 1957 — M.I.T. Club of New York — Dinner at Longchamps Restaurant, 42d and Lexington Avenue, 7:00 P.M. **Speaker:** Eger V. Murphree, '23, Special Assistant to Secretary of Defense. Mr. Murphree will speak on "Guided Missiles." (For further information, consult Anton E. Hittl, '36, M.I.T. Club of New York, 33 East 48th Street, New York 17, N.Y.)

March 14-16, 1957 — 9th Annual Fiesta, M.I.T. Club of Mexico, Mexico City, D.F. (For reservations, consult Clarence M. Cornish, '24, Margaritas 139, Villa Obregon, Mexico 20, D.F., Mexico.)

June 10, 1957 — 23d Alumni Day, 1957, M.I.T. Campus in Cambridge.

September 6-7, 1957 — 2d Alumni Officers' Conference, M.I.T. Campus in Cambridge.

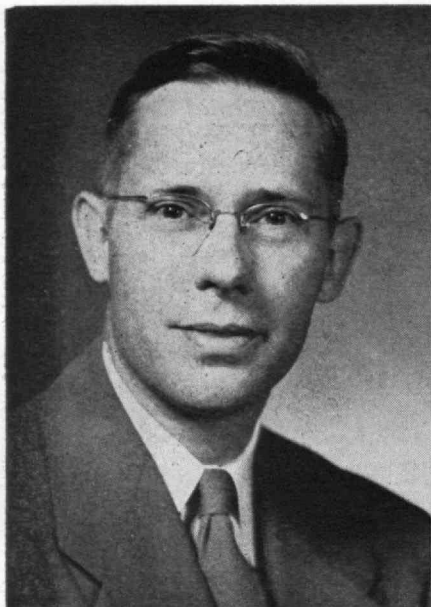
December 7, 1957 — 11th M.I.T. Alumni Regional Conference, Pittsburgh, Pa.

Communications Sciences

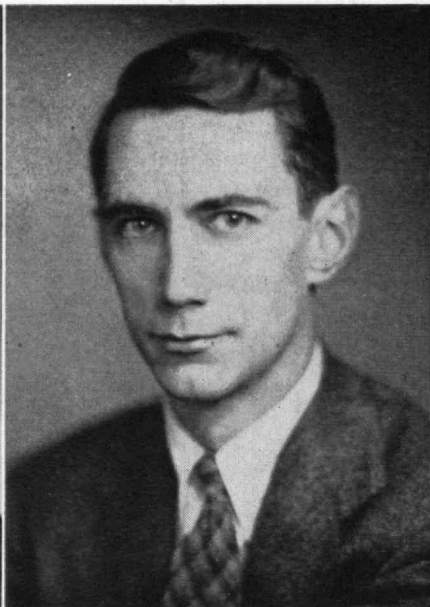
■ Claude E. Shannon, '40, one of the world's leading scientists in the field of information theory, has been appointed to the Faculty of the Institute, according to James R. Killian, Jr., '26, President. Dr. Shannon will have the unique dual title of professor of communications sciences in the Department of Electrical Engineering and professor of mathematics. For the past year Dr. Shannon has been visiting professor of electrical communications, while remaining a research mathematician on the staff of Bell Telephone Laboratories. He will continue collaborative work with Bell.

Dr. Shannon has achieved special eminence in the field of information theory, a new branch of science which combines the methods of mathematics and electrical communications in computing, automation, and areas of the behavioral sciences that bear on the relation of man to his environment. It encompasses such practical applications as the nationwide automatic telephone system and devices by which streams of electrons can be translated into television pictures. A particularly fertile field in the application of information theory deals with effective means of squeezing more information into a given communication channel. Late in January, Dr. Shannon was presented with the 1956 Research Corporation Award for his work on information theory.

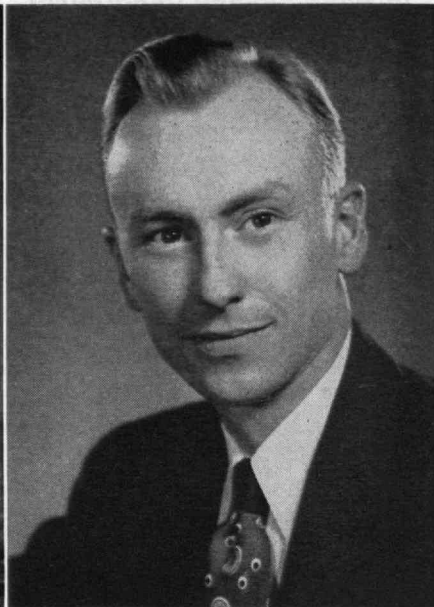
As a member of the Institute Faculty, Dr. Shannon is expected to play a key role in the evolution of the new and rapidly expanding field of communications sciences, seeking to merge new segments of the vast areas of the physical and life sciences. Studies centered in the Research Laboratory of Electronics will attempt to integrate the disciplines of mathematics, electrical engineering, psychology, and physiology for the purpose of a better understanding of



M.I.T. Photo



Bell Telephone Laboratories



M.I.T. Photo

Among those recently appointed to new academic or administrative posts at the Institute are (in usual order): Irwin W. Sizer, who becomes head of the Department of Biology; Claude E. Shannon, '40, recently appointed professor of communications sciences in the Department of Electrical Engineering and professor of mathematics; and J. Edward Vivian, '39, Professor of Chemical Engineering, who became faculty assistant to Edward L. Cochrane, '20, Vice-president for Industrial and Governmental Relations.

communications within man, communications and control between man and machine, and communications and control between machine and machine.

A native of Gaylord, Mich., Dr. Shannon received a B.S. in electrical engineering and mathematics at the University of Michigan and then came to M.I.T. for a master's degree in electrical engineering and a Ph.D. in mathematics. While a student here he wrote a thesis of such originality and significance that it had an immediate impact on the designing of telephone systems.

Dr. Shannon became a research assistant at M.I.T. in 1936 and an assistant in mathematics in 1938. For a time he was in charge of the M.I.T. differential analyzer. In 1940 he went to the Institute for Advanced Study at Princeton for a year and in 1941 joined the staff of Bell Telephone Laboratories.

Scientific papers by Dr. Shannon have ranged from those dealing with the theory of optimum transmission of information to theoretical studies of machines which would play chess and other games. He holds several patents.

Dr. Shannon's work has been recognized by the award of the Alfred Noble Prize of the American Institute of Electrical Engineers, the Morris Liebmann Award of the Institute of Radio Engineers, and the Stuart Ballantine Medal of the Franklin Institute. In 1954 he was awarded the honorary degree of master of science at Yale University. He is a member of the National Academy of Sciences.

Faculty Assistant to Admiral Cochrane

■ Announcement has been made of the appointment of J. Edward Vivian, '39, Professor of Chemical Engineering, as the Faculty Assistant to Admiral Edward L. Cochrane, '20, Vice-president for Industrial and Governmental Relations, as of January 1. Professor Vivian will retain his association with the Depart-

ment of Chemical Engineering and continue his teaching.

Born in Montreal, Canada, in 1913, Professor Vivian studied at McGill University and received the degree of B.Eng. in 1936. As an assistant he joined the staff of the Institute's Department of Chemical Engineering in 1937, and in 1939 and 1945, respectively, obtained his S.M. and Sc.D. degrees from M.I.T.

He became assistant professor of chemical engineering in 1942, associate professor in 1946, and attained a full professorship in 1956.

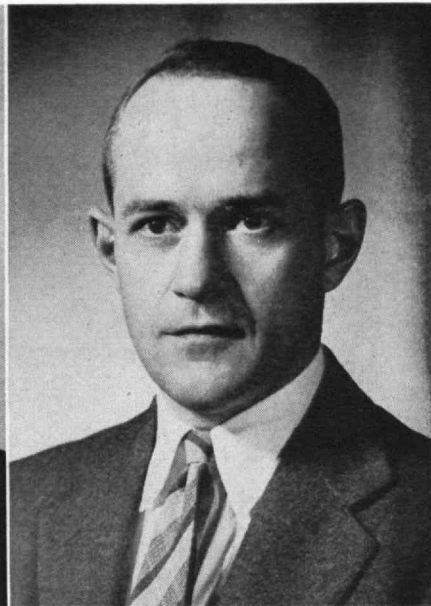
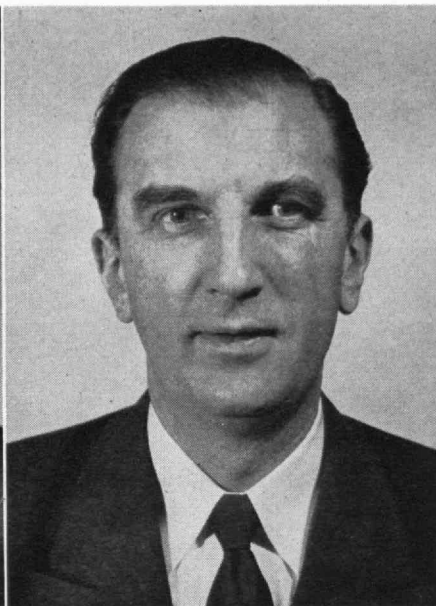
Professor Vivian has held several administrative posts, beginning in 1938 when he became assistant director of the Bangor Station of the Chemical Engineering Practice School, and then director of the Buffalo Station in 1941. Continuing with administrative duties, in 1943 he was acting director of the School of Chemical Engineering Practice, and became director in 1946. He was appointed director of the Oak Ridge Engineering Practice School in 1948.

The directorship of the School of Chemical Engineering Practice and the Oak Ridge Engineering Practice School will be assumed by Robert C. Reid, '54, Assistant Professor of Chemical Engineering.

Arthur D. Little Visiting Professor

■ Lars G. Sillen, distinguished Swedish scientist and Dean of the Chemistry Department at the Royal Institute of Technology in Stockholm, has been named Arthur D. Little Visiting Professor of Chemistry at the Institute for the current semester.

His lectures on "Studies on Chemical Equilibria," are to be delivered during the next three months. Members of the M.I.T. Chemistry Department and all chemists in the Boston area are invited to attend these lectures (the first of which was presented on February 18) to be given on Mondays and Wednesdays at one o'clock.



M.I.T. Photos

William H. Radford, '32 (left), and Carl F. J. Overhage (center) have been appointed associate director and director, respectively, of Lincoln Laboratory, research unit operated by M.I.T. They succeed George E. Valley, Jr., '35, who returns to M.I.T. as professor of physics, and Marshall G. Holloway who takes an important industrial assignment in nuclear science. At the right is Lynwood S. Bryant, Associate Professor of English and History, recently appointed Director of The Technology Press.

Direct Lincoln Laboratory

■ Appointment of Carl F. J. Overhage as director and of William H. Radford, '32, as associate director of Lincoln Laboratory was announced on February 4 by President Killian. They succeed, respectively, Marshall G. Holloway and George E. Valley, Jr., '35, who have resigned.

Dr. Holloway came to the directorship of Lincoln Laboratory in May, 1955, from the Los Alamos Scientific Laboratory in New Mexico, and will go to a new position in industry. Dr. Valley, promoted from associate to full professor of physics, is returning to Faculty service on the M.I.T. campus in Cambridge. He became associate director of Lincoln Laboratory in 1953. During World War II he was on the staff of the M.I.T. Radiation Laboratory and served as technical editor of the laboratory's Office of Publications. He has received the President's Certificate of Merit and the Department of Defense Exceptional Service Award for his contributions to defense work.

Dr. Overhage, a native of London, received B.S., M.S., and Ph.D. degrees in physics in 1931, 1934, and 1937, respectively, from the California Institute of Technology. He was a group leader at the Radiation Laboratory during World War II, was on the staff of Eastman Kodak Company for five years, and in 1951 returned to M.I.T. as member of a group studying special problems of national defense. He joined the newly organized Lincoln Laboratory, then returned to Eastman for a time and served the Air Force as a member of the Scientific Advisory Board to the Chief of Staff before becoming a division head at Lincoln. He has specialized in the development of data transmission and in prototype evaluation for the SAGE system of air defense. His special scientific interests are in radar and photography.

Dr. Overhage was awarded the President's Certificate of Merit for his technical contributions in World

War II. He is a fellow of the American Physical Society and a member of the Optical Society of America, Sigma Xi, and Tau Beta Pi. He lives in Belmont. Dr. Overhage has been head of Division II, Aircraft Control and Warning, at Lincoln.

Professor Radford, who was born in Philadelphia, received a B.S. degree at Drexel Institute of Technology in 1931, and an M.S. degree from M.I.T. in 1932. He has been on the staff of the M.I.T. Department of Electrical Engineering since 1932, becoming a full professor in 1951. In 1941 he assisted in establishing the M.I.T. Radar School and he became associate director of it in 1944. He was a section member and consultant to the National Defense Research Committee from 1940 to 1943.

In 1953 Professor Radford went to Lincoln, where he has pioneered in the development of scatter radio communications, the "over-the-horizon" system which is used for all communications between the mainland and the Texas Tower and for other purposes. He has been head of Division III, Communications and Components, which also carries on research and development in such scientific fields as solid state physics.

Professor Radford is a fellow of the Institute of Radio Engineers and of the American Association for the Advancement of Science and is a member of the American Society for Engineering Education, the American Institute of Electrical Engineers, Sigma Xi, Tau Beta Pi, and Eta Kappa Nu. He lives in Watertown.

Technology Press Director

■ Lynwood S. Bryant, Associate Professor of English and History, has been appointed director of The Technology Press, effective on February 1. Frederick G. Fassett, Jr., the former director, who became dean of residence last fall, will continue to serve on The Technology Press Board.



Victors clasp hands on the podium after the medal presentation for the Finn class yachting event at the St. Kilde Yacht Club in Melbourne, Australia, as Olympic yachting comes to a close on December 6. First place went to P. B. Elvestrom of Denmark (center) and second place went to A. Nelis of Belgium (left). John Marvin, '49 (right), representing the United States, won third place and a bronze medal.

On the basis of usual scoring in which all races in the series have equal value and all races count, Marvin had by far the best score, and led for the first two days of the Finn monotype dinghy class races late in November.

Wide World Photo

Professor Bryant is a native of Keene, N.H., was graduated from Harvard University and came to the M.I.T. staff in 1937. In 1942 he was made assistant professor, and was promoted to the grade of associate professor in 1946. Professor Bryant will continue to teach in the Department of Humanities.

The Technology Press was founded in 1932, and since 1938 has been under the general direction of The Technology Press Board, of which John E. Burchard, '23, Dean of the School of Humanities and Social Studies, is now chairman. The function of The Press is to assist members of the M.I.T. staff with the preparation and publication of books of intellectual importance or educational value. It welcomes titles that will yield an income, but it is also interested in important manuscripts without the sales potential attractive to commercial publishers. The Press is also prepared to handle preliminary versions of text material to be tried out in the classroom for a year or two before being finally revised into a book.

In recent years The Press has broadened its interests and grown rapidly. It now has a list of some 60 titles. Most of its books are published under a special contract which makes available to The Press all of the production and distribution facilities of an established commercial publishing house.

Tech Sailors in Olympics

■ A bronze medal, emblematic of third place in the Finn monotype dinghy class, rewarded the effort of John Marvin, '49, in the 1956 Olympics held in Melbourne, Australia, during the last week in November. The only other medal won by a United States yachtsman was a first place gold medal won by Herbert Williams of Chicago in his Star class yacht *Kathleen*.

Marvin compiled a fine record finishing second to Paul Elvestrom of Denmark, the 1948 and 1952 Olympic champion, in the first race of the seven. He

placed second to Andre Nelis of Belgium in the second encounter and by finishing eighth (to Elvestrom's sixteenth place) in the third race, jumped into the lead event as Nelis was disqualified. Marvin led for two days but then first places by Elvestrom gave him the series. Marvin was tied for second place, as Nelis went into the last race, but finished astern of Nelis to land in third place.

Scoring under the Olympic system is by a weighted formula giving a large bonus to the top positions. Seven races are sailed and one may be discarded. Ironically, scoring by the usual system of equal value for places and counting all races in the series, Marvin had by far the best score. Andre Nelis was forced to retire from one of his races and Paul Elvestrom's sixteenth place was discarded and so did not penalize their score.

C. Eric Olsen, Jr., '39, sailing in the two-man Sharpie class finished a disappointing ninth of 13 competitors, the winner being the yacht *Jest* of New Zealand. Olsen's boat arrived in Australia with its mast and rigging lost in transit and the hull badly dried out. Getting the boat ready for the series left little time for practice. The high spot in his experience was a race where the wind increased to 50 miles an hour in which he placed fifth and was the last boat to finish the course. As a final tribulation, his boat was swamped in breaking seas near shore after finishing.

Both M.I.T. graduates extolled the hospitality of the Australians and described enthusiastically the experience of living in the Olympic village among the athletes of the world. Their enthusiasm is shared by Walter C. Wood, '17, Sailing Master at the Institute, who from the Sailing Pavilion loft continues to scan the waters of the Charles for embryo Olympic contestants among the neophyte members of the M.I.T. Nautical Association.

Twenty-five Years Ago This Month . . .

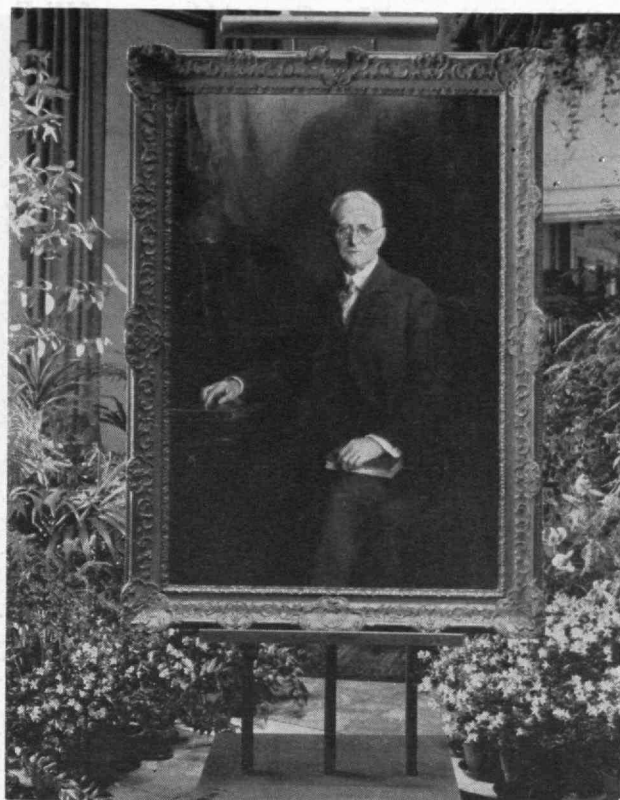
■ On March 14, 1932, the Institute mourned the passing of George Eastman, the "Mysterious Mr. Smith" whose anonymous support had enabled President Richard C. Maclaurin in the years immediately preceding World War I to proceed confidently with M.I.T.'s removal to the present location in Cambridge, which was dedicated in June, 1916. In the words of Carl W. Ackerman, his biographer, writing in *The Review*:

"George Eastman's interest in this institution covered a span of more than 40 years and during the greater part of this period he was an inconspicuous and detached student and beneficiary.

"During these years of industrial expansion in the United States, graduates of Technology came in increasing numbers to Rochester and to other industrial centers. As Mr. Eastman observed them and studied the annual reports of Technology, he became convinced that 'the progress of the world depends almost entirely upon education.' Then when he reached the distributive period of his own life, he was prepared to cooperate with and to encourage President Richard C. Maclaurin in building the Institute of Technology as it is today.

"Mr. Eastman himself never sought nor desired recognition. Early in his own career he had become convinced that 'individuals may form communities,' as Disraeli observed, 'but institutions alone can create a nation.' If Mr. Eastman could have distributed the bulk of his fortune as secretly as he did his income, it is doubtful whether his identity as 'Mr. Smith' would be known today. . . .

"At the time Mr. Eastman's biography was being written he did not know how much money he had actually given Technology. When a tabulation was finally obtained, indicating an amount of approximately twenty million, he studied the figures for several moments, and then remarked: 'In a few years that will not be very large, for Technology will grow.'"



George Eastman: 1854-1932

. . . Congratulations were being extended to Joseph E. Nute, '85, for being the recipient of the first Silver Beaver Award ever authorized by National Headquarters of the Boy Scouts of America; to Harry P. Charlesworth, '05, Vice-president of the Bell Telephone Laboratories, upon his nomination for the presidency of the American Institute of Electrical Engineers; and to James M. Barker, '07, upon his appointment as Vice-president in charge of Retail Administration of Sears, Roebuck and Company.

Individuals Noteworthy

■ Prominent in the news since the advent of 1957 have been the 21 Alumni promotions, elections, or appointments enumerated below:

Charles Edison, '13, as Chairman of McGraw-Edison, formed by the merger of Thomas A. Edison, Inc., and McGraw Electric Company . . . *Alfred W. Devine*, '14, as Deputy Registrar of Motor Vehicles of the Commonwealth of Massachusetts . . .

Charles J. McCarthy, '16, as a member of the National Advisory Committee for Aeronautics (succeeding *Arthur E. Raymond*, '21) . . . *Marvin Pierce*, '18, as Chairman of McCall Corporation . . .

David P. Brown, '20, and *Arthur R. Gatewood*, '21, respectively, as President and Vice-president for Operations of the American Bureau of Shipping . . . *Dana D. Sawyer*, '22, as Vice-president of the Federal Reserve Bank of Boston . . .

Dale D. Spoor, '22, as Vice-president of Air Reduction Sales Company . . . *Foster N. Perry*, '24, as

Chairman of Robert Bosch Corporation . . . *Charles H. Wardwell*, '24, as a Director of the Rockland-Atlas National Bank of Boston . . .

Theodore A. Mangelsdorf, '26, as Vice-president of the Texas Company . . . *Elisha Gray*, '28, as a member of the Business Advisory Council of the United States Department of Commerce . . .

Eric A. Bianchi, '29, and *Paul Wing, Jr.*, '34, respectively, as Vice-president and Chief Engineer of the Mason-Neilan Regulator Company Division of Worthington Corporation . . .

Gregory Smith, '30, as President and General Manager of Eastman Gelatine Corporation . . . *John B. Calkin*, '32, as President of Calkin and Bayley, Inc., industrial consultants . . .

Thomas F. Morrow, '35, as Vice-president of Chrysler Corporation . . . *H. Arthur Zimmerman*, '37, as Vice-president in charge of sales, Steel Improvement and Forge Company, Cleveland . . . *Donald P. Severance*, '38, as the 61st President of the Appalachian Mountain Club . . .

Wilbur F. Young, '45, as General Manager of W. F. Young, Inc., manufacturers of Absorbine Jr. . . . Richard H. Harris, '48, as Assistant Controller of Norton Company, Worcester, Mass.

■ Special honors recently announced or awarded to Alumni and members of the Faculty include:

To *Ralph T. Walker*, '11, and *Louis H. Skidmore*, '23, respectively, its Centennial Medal and 1957 Gold Medal by the American Institute of Architects . . .

To *Chester A. Boggs*, '25, a certificate as a Fellow, by the Audio Engineering Society . . . to *Charles Kittel*, '38, the Oliver Buckley solid-state physics prize for his applications of magnetic resonance methods to investigations of the electronic solids, by the American Physical Society . . .

To *Claude E. Shannon*, '40, its 1956 Award, by the Research Corporation . . . to *Jordan J. Baruch*, '47, named "the outstanding young electrical engineer for 1956," by Eta Kappa Nu, national electrical engineering honor society . . .

To *Dudley A. Buck*, '52, the 1957 Browder J. Thompson Memorial Prize for his paper, "The Cryotron—A Superconductive Computer Component," by the Institute of Radio Engineers . . .

To *Douglas W. Fuerstenau*, '53, and *Antoine M. Gaudin*, Richards Professor of Mineral Engineering at M.I.T., respectively, its Robert Lansing Hardy Gold Medal and Robert H. Richards Award, by the American Institute of Mining, Metallurgical, and Petroleum Engineers.

Laboratory of Earth Sciences

■ To seek answers to such questions as — (1) Is it possible to modify the weather on a large scale? (2) What is the interior of the earth really like? and (3) Why do continents and oceans exist and why are they distributed as they are? — the Institute has established a Laboratory of Earth Sciences. The announcement was made in February by George R. Harrison, Dean of the School of Science.

Under the chairmanship of Professor Robert R. Shrock, Head of the Department of Geology and Geophysics, a special Faculty committee has been making a comprehensive formulation of M.I.T.'s goals in all aspects of science dealing with problems of the earth. It is upon this committee's recommendation that the Laboratory of Earth Sciences has been established to provide creative experimentation and research on the geophysical problems of the earth.

The laboratory, which will be under the direction of Professor Henry G. Houghton, '27, Head of the Department of Meteorology, will attempt a new and integrated approach to experimental and theoretical investigations of man's environment: the atmosphere, the oceans, and the land masses between, including the interior of the solid earth. The new laboratory will probably need to spice its science with a dash of imagination.

"Controlled imagination," said Dr. Harrison, "is often the chief tool of the earth scientist as he assails such questions as the formation of continents, the causes of climate, or the nature of the earth four billion years ago."

Jointly sponsored by M.I.T.'s Departments of Geology and Geophysics and of Meteorology, the new

laboratory will become a research center for geologists, geophysicists, geochemists, meteorologists, and oceanographers.

M.I.T.'s Department of Geology and Geophysics is widely known for such diverse researches as the determination of the age of rocks by radioactivity, the development of new methods of exploration for mineral deposits, and the study of the structure of minerals by x-ray diffraction. Geology has been taught at M.I.T. since the founding of the Institute, and M.I.T.'s founder — William Barton Rogers — was a geologist.

M.I.T. also established the first formal program in meteorology in the country. It pioneered in developing many weather techniques and instruments now considered standard, including most recently the development of weather radar. Current research there is concentrated on the theoretical and physical approach to fundamental problems of the atmosphere.

Dr. Houghton, who will head the new laboratory, has been in charge of meteorology at M.I.T. since 1945 and a member of the staff there since 1928. He is well known for his research in cloud physics and atmospheric radiation and for some of his earlier studies with specific applications to aeronautics.

Midwinter Meeting

■ Highlight of the annual Midwinter Dinner Meeting of the M.I.T. Alumni Association, held at Walker Memorial on January 30, was a review of recent progress at the Institute by Julius A. Stratton, '23, Chancellor, and a panel discussion on "Technology and International Relations" by members of the M.I.T. staff. Panelists included: General James McCormack, Jr., '37, special adviser to President Killian, and also President of the Institute for Defense Analyses; Alexander G. Korol, a senior staff member of M.I.T.'s Center for International Studies; and Everett E. Hagen, Visiting Professor of Economics.

Max F. Millikan, Director of the Center for International Studies, led the panel discussion which followed a report on recent developments at M.I.T. by Chancellor Stratton. Meeting chairman was Theodore T. Miller, '22, President of the Alumni Association and President of the Polymer Chemicals Division of W. R. Grace and Company.

General McCormack, who was formerly director of research and development for the Air Force, spoke on the relationship between technology and national defense.

Mr. Korol, who has been studying Russian scientific education intensively for several years, compared and contrasted the techniques and results of United States and Soviet educational programs in science and engineering. It was Mr. Korol's view that Russian technical education at the Ph.D. level did not differ significantly from that in the United States, but that discrepancies showed up rather quickly at lower levels. This is attributed to the fact that Russian technical education is rigid with studies carefully prescribed. Graduates of secondary schools have much better preparation in physics and mathematics than many of the high school graduates in the United States. The technical institutes in Russia annually graduate about 140,000 technicians, or sub-profes-

(Concluded on page 256)

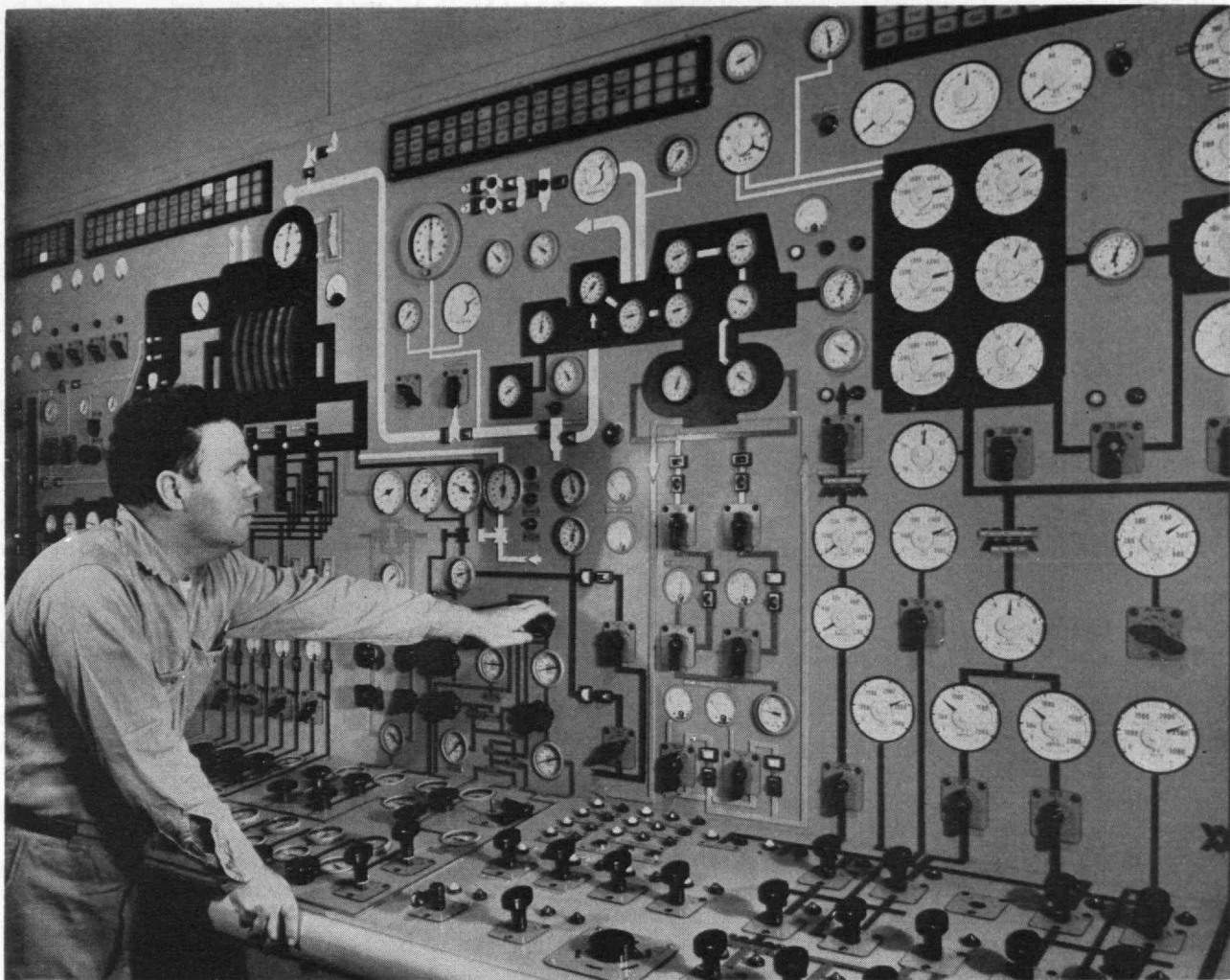


Photo by F. S. Lincoln, '22

Control panel of the Glenwood Landing Power Plant reflects the need of our modern industrial society for vast amounts of energy, for ample and adequate measuring techniques, and for effective techniques of control.

Education for Understanding

Acquisition of the language of words and numbers, of an ability to comprehend, and of desire to keep on learning is held to be the basis of education

by LEE A. DUBRIDGE

It may seem strange that our educational system in America today appears to be in such a crisis — in such a turmoil. From kindergarten to graduate school we find turmoil, unrest, uncertainty, dissatisfaction — a desire for change, coupled with uncertainty as to what kind of change. People have been educating their children for a long time. You would think we should have learned all about it by now. Why are we confused?

One reason is that it is only in the past century that the notion has become widespread that society should provide a free education for everyone. And, even today, that proposition is fully accepted only in a limited part of the world. And even then, in many countries, the concept does not extend beyond the sixth or eighth grades.

In fact, only in America — and even here only in the past 50 years — have we come to accept the double-barreled proposition, first, that free compulsory education should be provided for everyone through the 12th grade and, second, free education (but not compulsory) should be available to the Ph.D. degree for those who want it and can qualify.

We are, in fact, dealing with a new thing — a new experiment in social organization and custom. And new experiments, of course, always run into trouble. If we had been operating such a system for 1,000 years, we would have had time by now to have tried out dozens of ways of doing it; we could have observed the effects on many generations of students and would have learned about a lot of mistakes we would not need to make again; and we would have

evolved better methods of doing things. But we are just beginning to learn about universal education. It was only a few generations ago that education above the eighth grade was reserved for the wealthy — or for prospective lawyers, doctors, or preachers. “Storekeepers and farmers don’t need no education; they got work to do.” That’s what they said!

Yes, public universal education is still an experiment and we are the generation who have the privilege of being pioneers in the experiment. We should not be surprised at our mistakes; we should not be surprised even if we cannot agree which things *are* mistakes. But we will be betraying future generations if we do not do our best to do a better job than previous generations have done. So the first difficulty with public education is its youth.

The second difficulty with education is that the world in which the educated people have to live keeps changing. Some of us older folks went to public schools in the days before World War I. And here we are trying to live in the world of 1956. It is ridiculous really, isn’t it? How could our dear teachers have possibly known in 1916 what we would need to know in 1956? Just think how hopeless it is to expect our public schools today to educate people to live in the world of 1996 when we haven’t the foggiest notion of what that world is to be like?

Back in the Seventeenth Century it would not have been so bad. Things did not change much from generation to generation then. You could have adopted an educational system and tried it out for a few generations under practically the same conditions. You could conduct a controlled experiment! Now, however, when we try to educate the next generation as we think we ought to have educated the last one, we are almost certain to be wrong! The second trouble with education, then, is that the world is changing so fast that we cannot tell what we are educating *for*.

A striking example of this confusion in educational aims is found in an incident which took place in

Colonial Virginia. I quote from an account written in 1899:

After the principal business was settled, the commissioners from Virginia acquainted the Indians by a speech that there was at Williamsburg a college, with a fund for educating Indian youth; and that, if the Six Nations would send down half a dozen of their young lads to that college, the government would take care that they should be well provided for, and instructed in all the learning of the white people. . . . “We are convinced,” the Indians replied, “that you mean to do us good by your proposal, and we thank you heartily. But you, who are wise, must know that different nations have different conceptions of things; and you will therefore not take it amiss, if our ideas of this kind of education happen not to be the same as yours. We have had some experience of it; several of our young people were formerly brought up at the colleges of the northern provinces and they were instructed in all your sciences; but when they came back to us they were bad runners, ignorant of every means of living in the woods, unable to bear cold or hunger, knew neither how to build a cabin, take a deer, nor kill an enemy, spoke our language imperfectly, were therefore neither fit for hunters, warriors, nor counsellors; they were totally good for nothing. We are, however, not the less obliged by your kind offer, though we decline accepting it; and, to show our grateful sense of it, if the gentlemen of Virginia will send us a dozen of their sons, we will take great care of their education, instruct them in all we know, and make *men* of them.”*

Amusing? Yes. And yet, the gap between the Indians and the whites in 1750 was possibly no greater than that between our Twentieth and Nineteenth Century Americans.

It appears to be a piece of bad luck that we decided to adopt universal education at just the mo-

* Ford, Paul L., *The Many Sided Franklin*, pages 117–118 (New York, The Century Company, 1899). [Quoted by Gaylord P. Harnwell, President of the University of Pennsylvania, in his article “Reflections on Communicable Education and Its Enduring Values” in the *Association of American Colleges Bulletin*, October, 1956, page 363.]



The plotting of trajectories for guided missiles represents a good example of the need for emphasizing mathematics in modern education. As Dr. DuBridge remarks: “Not a machine can be designed, an engine’s performance predicted, an electric power plant constructed, without mathematics through calculus. And the design of an airplane, a ship, a guided missile, or an electronic computer requires a profound knowledge of higher mathematics. And, of course, the really interesting fields of nuclear physics and astronomy use group theory, matrix algebra, and non-Euclidean geometry. “In other words, no one from a grocer’s clerk to the nuclear physicist can do without mathematics; and the study of mathematics can be a great adventure in the methods of quantitative thinking which will provide a lifetime of better understanding of a technological world.”

M.I.T. Photo

ment in history when the world began to change so fast. But is it just a coincidence? Or is the world changing so fast just *because* we have public education?

We shall have to admit that the two are connected. The advances in science and technology which have made the world of 1956 so different from the world of 1856 have not been made by accident! They have come from the efforts and achievements of a host of *educated men*. And now we are trapped — for to keep this world going, we must have still more educated men to run it; still more to improve it further.

Education begets change. Then change demands not only more education, but a different education for every generation. Now we can see why professors have been writing so many books and articles on the subject of "education in a changing world." It may seem like a terribly trite subject — but it is still our most important problem. There is no use pretending we can educate for a static world. The world is going to keep on changing. And, curiously enough, the more we educate, even though we educate badly, the more change there is going to be.

Now let's see whether this leads to any conclusions about what our educational system ought to try to do, and what it should not do. There are a few general principles which emerge at once:

1. We should educate for the future — not for the past or even for the present!

2. We should emphasize those things which are permanent, or unchanging, or which change slowly, rather than things which will surely change or are changing rapidly.

3. Since principles or theories change more slowly than practices or procedures, we should emphasize basic fundamental *ideas* rather than more ephemeral, so-called practical matters. For example, the principle of the electric motor is a more permanent thing than the *design* of any particular motor. Also, the principles of the republican form of government are more lasting than the names of the present members of Congress.

4. However, in seeking the permanent or the lasting, we must not be confused and teach only the old, else we find ourselves teaching astrology rather than astronomy, alchemy rather than chemistry. False or useless things are often as old as the ages, while things eternally true may be as young as tomorrow.

5. Facts are quickly forgotten or become obsolete. But the ability to understand and use facts is a permanent asset. Hence it is more important to acquire understanding than to memorize facts.

6. Since we cannot hope to teach all the things the student will need to know 20 years hence, it is evident that what he learns is less important than acquiring the *desire* to learn. Conversely, if the love of learning has been killed by insistence on memorizing too many facts, then the child will surely some day be unprepared for life. For the facts he has learned will be forgotten or be partly obsolete, and the facility for learning new things will not have developed; understanding will not have been acquired. However, if the desire to learn and understand has been acquired, then our student will be ready for a changing world.



General Motors Research Staff

An advancing civilization requires an ever-larger fraction of its population to be engaged directly in scientific and technological pursuits.

I could go on enumerating more of such principles and giving more examples. But I think we can summarize the aims of education in a changing world as follows: (1) Acquire the tools of learning — reading, speaking, writing, arithmetic — that is, the language of words and the language of numbers; (2) Acquire the ability to understand — to comprehend — to think; (3) Acquire the desire to keep on learning — to keep on understanding.

If the student has achieved these things, he is ready for higher education or ready to acquire the vocational skills required to embark upon a useful career.

So much then for the general philosophy of education. A general philosophy does not, of course, solve the million practical problems which our schools face, such as teachers' salaries, teacher shortage, classrooms, curricula, costs, taxes, athletics, and so on. But without a general guiding principle, our educational system can end in chaos.

In some respects it is now in chaos. There are so many thousands of things that a modern American citizen ought to know that our curricula are jammed with bits of this and bits of that. We have not yet realized that it is impossible to teach a person in school all the things he ought to know all his life. Learning those things will be his life's work. The function of the school is to provide the student with the tools and the motivation necessary for him to go on learning all his life.

Now, if you will forgive me, I want to speak as a scientist. I fear that our schools are neglecting an important part of this task of providing the student

with the intellectual tools he will need to live a useful and fruitful life in modern America. Let me explain.

It takes only a little thought to realize that the one thing that has made the big difference between the Western world of today and the world of the time of Christopher Columbus is the growth of science and technology. When men like Columbus and Magellan began to break through geographical frontiers and then men like Leonardo da Vinci and Galileo and Newton began to break down intellectual frontiers, mankind was led to a new era of understanding and hence a new era of achievement. When it was discovered that nature behaved in precisely regular ways — in accordance with “laws” which men could discover and understand — then men became the masters of their environment and were no longer the slaves of imaginary demons. Then men began to use their understanding to improve their physical well-being. They developed machines to help them in their work; learned to use fire not only as a source of heat, but as a source of work, of energy, or power. Then came the abolition of slaves, because their work could be done better by steam. Modern industry was created; transportation and communication were revolutionized. And the world we know took shape.

Tools of Education

Now I think it is appropriate to suggest that the graduate of an American high school should be equipped to understand the nature of this world in which he is to live. I do not say he must know all about it; that is impossible for anybody. I do say he should have been introduced to the tools and the methods which will enable him to understand; and also he should have acquired a feeling that attaining understanding is desirable and useful. What are these *tools* he needs?

First of all, it must be emphasized that modern science and engineering are exact sciences — they are quantitative sciences. That means that their results can be stated in numbers; that their language is the language of mathematics. The engineer does not design a bridge, an automobile, an airplane or an atomic bomb by guessing about it! He must calculate the precise design of every detail — of every nut, bolt and screw; of every rod and plate. He must balance every factor — each part must be large enough to do the job, but not too large, too heavy or too expensive. Any automotive engineer could, no doubt, design a car that would last 100 years. But it would probably weigh 10 tons and cost \$1,000,000. He must balance endurance against cost — not by guessing, but by calculating and by testing.

And so it is with everything we touch. We live in a world of technology, and technology is a world of numbers and equations. Is it right to allow our high school graduate to emerge so ill-equipped that he has not the slightest chance of entering the world? I do not mean entering it professionally — though an ever-increasing fraction must do that too. I mean entering it intellectually — having a little appreciation for what it means and how it came to be. For example, it would be of immediate practical help for the student

to know what it means to say that the kinetic energy of the car he is driving varies as the square of the speed. How many do?

A letter to the editor of a Los Angeles paper recently expressed the fear that California might be hurt by the blast of a Bikini test bomb several thousand miles away. Apparently the argument is that if a 20-kiloton bomb produces damage out to three miles, then a 20-megaton bomb (1,000 times as big) will produce damage to 3,000 miles. But the damage radius varies as the cube root (the one-third power) of the energy. To produce an increase in damage area by a factor of 1,000 would require an increase in energy by a factor of 1,000 cubed — that is by a *billion*.

I noted recently a curious example of this inability to deal with numbers larger than a billion. A science story in a weekly news magazine contained the statement that in a certain volume of air there were “billions of molecules.” Now of course that is perfectly true, but it is about as significant a statement as to say that on the earth there live “dozens of people.” There are, of course, many dozens of people on the earth; in fact, there are about a quarter of a billion dozen. Similarly, there are many billions of molecules in a cubic centimeter of air; in fact, there are 30 *billion* billion molecules. We feel sorry for primitive men who were unable to distinguish numbers higher than three and who referred to everything else as “many.” Some day in the future, people will think of us Twentieth Century humans as being rather primitive because we were unable to think in terms larger than a billion.

Our whole modern civilization is built on mathematics! Not a street can be laid, a foundation dug, or a building constructed, without the use of algebra, geometry, and trigonometry. Not a machine can be designed, an engine's performance predicted, an electric power plant constructed, without mathematics through calculus. And the design of an airplane, a ship, a guided missile, or an electronic computer requires a profound knowledge of higher mathematics. And, of course, the really interesting fields of nuclear physics and astronomy use group theory, matrix algebra, and non-Euclidean geometry.

In other words, no one from a grocer's clerk to the nuclear physicist can do without mathematics; and the study of mathematics can be a great adventure in the methods of quantitative thinking which will provide a lifetime of better understanding of a technological world.

Need for Mathematics

Also, mathematics is a subject which can best be studied at an early age — before 17. And when intelligently taught it is not beyond the capacity of the average student! In any case, the decision as to whether it shall be taught should rest not on its difficulty, but on its importance. The difficulty can be reduced by clever teachers if there is an incentive to do so. It will not be done as long as it is required that a mathematics teacher have more hours of education courses than of mathematics.

(Continued on page 258)

The Cryotron

Institute of Radio Engineers awards its
1957 Browder J. Thompson Memorial Prize
for simple control mechanism developed

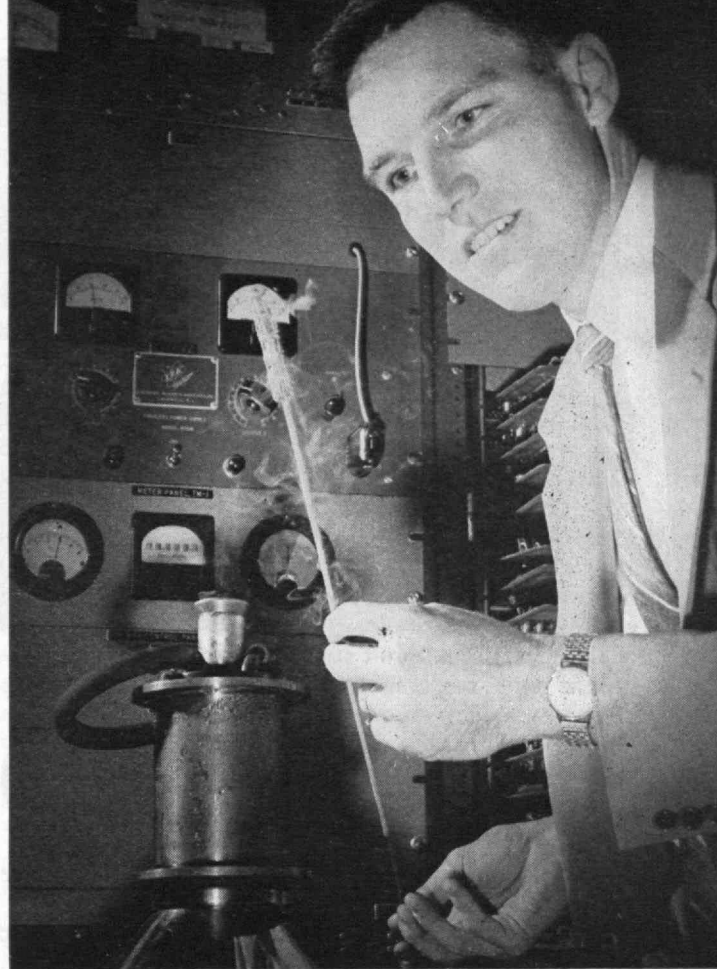
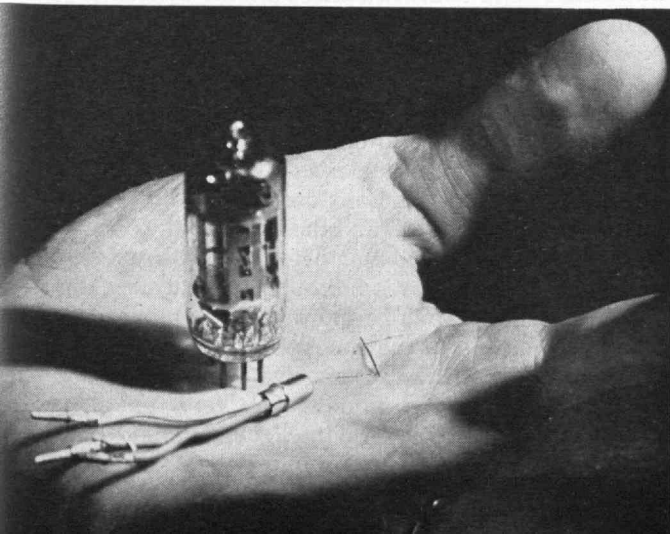
by DUDLEY BUCK

A NEW electronic circuit component, small in size, inexpensive to make, and easily fabricated from commercially available materials is a new development stemming from recent research at M.I.T. The new device, called a cryotron, makes possible amplification of current and power, is able to carry out switching operations, and gives promise of extensive application in large-scale computers. Because of its ability to amplify, the cryotron may be expected to compete with electron tubes and transistors in certain applications where very high speed of operation is not too important, but where small size is. The size of a cryotron, compared with the size of a transistor and a miniature type of vacuum tube, is shown in the illustration at the bottom of this page; the device is sufficiently small that 100 will fit into a thimble.

The cryotron is the result of researches in two entirely different fields, both of which have been pursued at the Institute for a number of years. The cryotron principle was developed by Dudley A. Buck, '52, as a result of studies, conducted at Lincoln Laboratory, on nonlinearities in nature with an eye toward computer applications. But the cryotron would have remained merely a scientific device of little use outside of the research laboratory without the availability of commercially practical refrigerators capable of maintaining temperatures at, or very close to, absolute zero. A rugged refrigerator, operat-

A miniature electron tube (left) and typical transistor (center) compared to a cryotron unit (right). The cryotron consists of a tantalum wire around which a niobium coil is wound. For computer applications the cryotron replaces electron tubes or transistors.

M.I.T. Photos



Just removed from a container of liquid helium (4.2 degrees K) is this rod containing 40 cryotrons and held by Dudley A. Buck, '52. Mr. Buck began development of the cryotron three years ago at M.I.T.'s Lincoln Laboratory. He is an instructor in the Department of Electrical Engineering, and staff member of Lincoln Laboratory and also of the Research Laboratory of Electronics at M.I.T.

ing at the temperature of liquid helium (4.2 degrees K) and known as the cryostat, has been developed by Samuel C. Collins, Professor of Mechanical Engineering, and for the past few years has been produced on a commercial basis by Arthur D. Little, Inc.

The cryotron is the first useful application of a phenomenon discovered in 1911 by H. Kamerlingh Onnes of Leiden. It makes use of that property of a metal, called superconductivity, by which its electrical resistance suddenly vanishes at a transition temperature within a few degrees of absolute zero. The condition of zero electrical resistivity is also determined by the magnetic field as well as the temperature to which the conductor is subjected. If the conductor is held below the transition temperature, its resistance becomes zero; it remains zero in the presence of a small magnetic field until the field intensity reaches a critical value. Above this value, the material returns to its normal resistance.

Both in principle and in practice, therefore, the conducting properties of a substance — such as a wire, for example — may be made to vanish by maintaining it in an environment within a few degrees of absolute zero, whereas a change from normal conductivity to superconductivity may be effected by
(Continued on page 256)



Bradford Washburn

Campus on the Charles — a university polarized about science

The Education of Our Talented Children

Specifically planned to emphasize quality of education, a new type of industrially supported secondary school is proposed, in this condensation of a recent address

by H. G. RICKOVER

ONLY in the last few years have we begun to see that our trained man-power shortage is the inevitable consequence of a long-term trend in American education which must be halted if we wish to retain our technological lead. To put it bluntly, our schools do not perform their primary purpose which is to train the nation's brain power to the highest potential.

One half of our children who are endowed with the ability to enter college and university do not do so. For every high school graduate who eventually earns a doctoral degree there are 25 others who have the mental capacity to achieve that degree, but do not. If our schools had succeeded in inspiring a love of learning in these children they would have become professional men and women and we would not be faced today with a deficiency of trained man power. Lack of funds is only partly responsible for this irreplaceable loss. Had there been proper motivation, nearly all of these young people could have found ways and means to obtain a professional education.

This is a serious indictment of our schools, but it would be most unfair to place the blame on our harassed teachers and school officials. Inadequate staffs of underpaid and overworked teachers must cope with a tidal wave of children which threatens to overwhelm our crowded schools. No, the blame rests squarely upon us all.

As of today, the American people seem to feel that education is worth no more to them than about half what they are paying for recreation, that is about 4 per cent of the national income.

In recent years, distressing intelligence has reached us that Russia has created a formidable educational system which bids fair to outproduce us in trained personnel. They may even beat us to the goal of becoming the first nation to give every child the opportunity of advancing upward on the educational ladder to the very topmost rung — provided he has the intelligence and applies himself — with tuition, books, room and board entirely provided by the state.

It would be unwise to dismiss as empty boasting Krushchev's remark that Russia will soon have more scientists and engineers than we. She is already training more than her economy presently needs while we are training fewer. Unless we take drastic steps to reverse this trend she will catch up with us and eventually surpass us. The Russian aim is to achieve world scientific and engineering supremacy.

Russia will soon have a *surplus* of trained man power which she can export. We have a *shortage*. Can we allow Russia to outdo us in aiding the neutrals; become Big Brother to backward countries?

No matter what methods are chosen in the duel between the communist and the free world, education will, in the final analysis, determine the outcome, particularly the education of talented youth.

It is therefore most unfortunate that our social mores are hostile to the concept that children of superior mentality ought to receive special consideration at tax-supported schools. The very thought of recognizing differences in intellectual ability is repugnant to our equalitarian philosophy.

In our democratic society we are committed to the basic assumption that there is no person who can claim to be an *indispensable man*. We proceed from this entirely correct assumption to the incorrect conclusion that neither does a democracy have *indispensable men*. This is obviously erroneous. A moment's reflection will show that no society can function without its indispensable men. By this I mean the men who, because of natural endowment and careful training, possess the intellectual, artistic, and moral abilities to carry forward the momentum of civilization and to build upon its existing foundations.

Knowledge Leads to Specialization

It has been estimated that the efforts of a mere 1 per cent of the total population move the world forward. This small group is indispensable to the maintenance and advancement of our civilization.

The more complex a society becomes, the larger proportionately is the number of intelligent, highly trained men needed for its proper functioning. They are the men who provide leadership in government, industry, and labor; the men who think creatively, who invent, who push the boundaries of knowledge outward; the men who enrich life through their moral leadership or artistic gifts—all of the competent people who manage our complex technological civilization. They are all indispensable to our society. We must keep their ranks replenished by the inflow of properly trained youth of superior mental ability if we are to progress in the future as in the past.

It is estimated, for example, that a 3 per cent annual increase in our gross national product will require a $4\frac{1}{2}$ to $5\frac{1}{2}$ per cent annual increase in scientific and engineering man power. Or, to put it differently, in the last 20 years our population has increased by 35 per cent, but the number of scientists has increased by 450 per cent, and engineers by 225 per cent. Yet even this tremendous increase leaves us seriously short. Fifty years ago we needed one engineer for every 1,000 workers; today the proportion is one engineer for 65 workers, and in some industries it is already one for every 20 workers.

Every advance in any given field of knowledge leads to greater specialization; each specialized field in turn requires a new army of people trained for it specifically. Today, technological progress is limited only by availability of trained professionals, and this, in turn, depends on but two factors: incidence of superior brain power, over which we have little, if any, control; and development of available talent—here we can do much.

However, for a rough approximation of the percentage of children with sufficient mental capacity to absorb training for a professional career let us take the figure of 15–20 per cent, which includes those having an I.Q. of 115 and over. This incidentally is also the percentage of children who in Europe are able to pass the examinations for entrance to academic secondary schools. I shall henceforth use the term “talented” for the top 15–20 per cent of our children and the word “brilliant” for the top $1\frac{1}{2}$ to 2 per cent.

Very little is done in our schools to seek out and identify this top 15–20 per cent of our children. With few exceptions they are being taught along with the 80 per cent of average and below-average mentality. Up to age 12, the curriculum for all children is the same. In junior and senior high schools a basic core of the curriculum remains obligatory for all, and this is taught in classes which are attended by the whole range from below average to brilliant children. This is so except in some few large high schools where attempts have been made to set up different sections for children having different degrees of ability and achievement. The length of schooling is the same for all children, with some very few instances where talented children are allowed to skip a grade or two.

Now, there is ample evidence that in any class which includes slow and fast learners, the slowest group sets the pace and receives most attention from the teachers. The above-average child is kept from advancing at the speed appropriate to his ability, with the result that many lose interest in learning as such, others develop sloppy habits, and some build up a false sense of superiority which convinces them that they are so smart that they will never need to apply themselves to anything. The deadly routine sets in on these young and malleable minds.

As is often the case, where there is community pressure not to fail the poor student, advancement into the next higher grade becomes virtually automatic. This tends to convince the slow learners and lazy pupils that they can get by without working. Talented children may well resent having to work harder for no tangible reward. All children need incentives to keep up the learning process. Therefore, the practice which is to be found in many schools of “never giving A’s,” or of “grading the child only as against his own past performance,” or of limiting report card comments to “satisfactory” and “needs improvement,” is a particularly unfortunate concession to a dubious tenderness for the sensibilities of those parents whose children show neither ability nor a desire to learn.

Superior Student Inadequately Served

In addition to the common core of obligatory courses, our high schools offer a wide choice of elective subjects from which each child may pick those he prefers. Among the electives there are the tough academic subjects which constitute the college preparatory program—mathematics, algebra, geometry, trigonometry, physics, chemistry, biology, foreign languages; there are the vocational subjects which make much less demand on the intellect or will power since little homework is required—domestic sciences for the girls, and various trade skills for the boys; finally there are the subjects of a recreational nature—square dancing comes to mind—or those which in a vague sort of way aim to train children in co-operative and mutually helpful living—courses in social manners, life adjustment, the art of makeup, and how to attract the opposite sex.

All except the academic subjects are of the kind which we might term “know-how.” That is, they have nothing to do with the school’s primary task which is

to teach young minds to think and to train them in the elementary tools of learning. This is a task which can be performed only by the school. Vocational, recreational, or life-adjustment training can be and should be obtained elsewhere. Our teacher shortage would be greatly lessened if we relieved them of all responsibilities except those of teaching the *minds* of children and developing their *bodies* through physical training.

This may sound strange to us, accustomed as we are to the intermingling in our schools of academic and vocational training, and to the great emphasis given to social activities. But we are the only country where schools are part social institutions; everywhere else children receive academic training in general schools, and vocational training in special vocational schools or through on-the-job training programs combined with general education at special secondary schools.

The Exceptional Child

In nearly all respects the mentally superior child is less adequately served at school — taking into account its special requirements — than the average or, for that matter, the physically or mentally handicapped child. I realize, of course, that we must and should make special provision for unfortunate children. Our hearts are here involved and it is to the credit of our people that they will readily abandon such cherished principles as “equal education for all” to answer the call of compassion. Yet why should we show less compassion for the mentally superior child whose fine abilities are being left untended? Oddly revealing of American thinking is the fact that the term “exceptional child” conjures up to most educators not the talented child but the handicapped one. Books and magazines dealing with exceptional children seldom give more than perhaps 1 per cent or so of space to the needs of the talented child.

Nor are we sufficiently aware that, in the final analysis, our cherished American standard of living is largely dependent on the work of a very small group of skilled professionals. In part, this is a consequence of a curious inconsistency in our attitude toward “science” as against “scientists” and “scholars.” We admire science greatly and we place in it an almost childlike trust; we expect it will continuously pour out delightful wonders to make our lives ever more agreeable. But upon scientists and scholars many of us look with a somewhat jaundiced eye; we call them “eggheads” and “intellectuals”; we do not consider them to be entirely normal persons. In truth, we have no real admiration for higher learning as such, nor are we willing to respect those engaged in it unless we see an immediate practical advantage to ourselves in their work. Most Americans dislike the very idea that people are unequal in intellectual capability, though they are ready enough to recognize inequality of natural endowment in other respects. This ambivalence in our attitude toward the mentally superior is surprising when we compare it with the generous applause we lavish on superior talent in athletics or in the arts; on superior beauty or on superior business acumen.

Although not all talented children are academically inclined, enough of them do so well at institutions of higher learning that the spending of public funds for the better education of all talented youth is an exceedingly good investment for the nation as a whole, and would do much to relieve our national deficit in trained professionals.

It is well to remember that the transformation of the traditionally academic American high school into a combination college preparatory, vocational, and social institution came about in response to the demand for schooling of a type more appropriate to the majority of children — those who could not or did not want to take academic courses but whose parents nevertheless wished them to attend high school. As nonacademic, know-how subjects wormed themselves into the curriculum, the high school became less and less able to give proper attention to the special educational needs of the minority of children whose superior intellect could find no challenge in downgraded curricula. This is particularly true in small communities where the college preparatory program of the high school is apt to be curtailed whenever shortages of school funds or teachers occur.

Almost half our high schools teach no foreign languages — and this at a time when our foreign commitments call for a large corps of trained men and women with linguistic as well as professional ability. Almost a quarter of the high schools offer no physics, chemistry or geometry — and this at a time when a grounding in science becomes more and more important for everyone, including those not in academic careers.

As a matter of fact, I seriously question whether substitution of “know-how” subjects for academic subjects benefits even those children who do not intend to follow academic careers. A great deal of this high school training in “know-how” is wasted because obsolete methods, equipment, and instruction are used. Such training is primarily the job of industry and can be done much better and in considerably less time in a factory than in a high school. Education is not a process for transmitting techniques.

Eliminate “Know-How” Subjects

Today every citizen needs the tools of thinking — the three R’s — reading, writing, and arithmetic — and such general knowledge of history, civics, and literature as will make the world we live in understandable. In our technical civilization, manual and white collar workers, tradesmen and merchants — in short, everyone needs as much general education as he can possibly be coaxed to absorb. It isn’t doing our children any favor to spare them all mental effort by making school too easy and too pleasant, and to substitute “know-how” subjects of doubtful value for mental training.

Eliminating “know-how” subjects from the high school curriculum and requiring all students to take more academic ones does not solve the problem of our talented children. It is high time that we recognize their right, even if they are a minority, to schooling appropriate to their needs. For the last 50 years we have, in the name of educational democracy,

tried to make one common school serve all children instead of finding the appropriate school for the two main groups of children — the majority who plan on nonacademic careers, and the minority who plan for college and university. We must reverse this unfortunate trend in American education.

Let me remind you of the separate purposes and traditions of academic and nonacademic schooling.

It was Socrates who said that "knowledge is virtue." Though there have been regrettable lapses, Western civilization has never completely lost sight of this truism. The Greeks, alone of all the nations of the ancient world, placed knowledge and the power of thought above all other pursuits as being most worthy of a civilized man and a civilized state. We are indebted to them for that marvelous pedagogical invention — the liberal arts curriculum — which has never been surpassed for training the young to think, to use their brains in solving particular problems, and for providing a broad basis of general knowledge upon which specialized training could later safely be superimposed. We are rediscovering that a professional man needs the foundation of a liberal arts education in order to use his specialized training wisely. The man who is highly trained in only one field of knowledge and illiterate in all others can be a positive danger to society.

Rome went to school in Greece, and so Greek ideas on education spread throughout Europe. When Rome fell, Europe was more literate, it had more books, libraries, and schools than at any time during the next thousand years. Only a dim flicker of learning was kept alive by the Church. From this and from the knowledge of the ancient world which had been preserved in Arab schools and was transmitted westward during the Crusades, Europe rebuilt its education. In the Twelfth Century universities made their

appearance and soon spread all over Europe — there were 108 by the year 1600. Latin was the language of the Church, and since churchmen made up the faculties of medieval universities, Latin was the language which every person had to learn to enter a university to study for a professional career.

To this end, so-called Latin schools were founded in which youngsters were given a classical education preparatory to enrollment in the university. Sometimes these schools were attached to a cathedral, sometimes they were set up by private endowment, or founded by kings as charitable institutions for children of poor or deceased courtiers. These Latin schools, or grammar schools, as they are still called in England, are the forerunners of European — and of early American — secondary schools. Although the brilliant child of poor parents was seldom barred from these schools and scholarships were always available, the secondary schools were used for the most part by children from well-to-do homes.

Alongside this education for children destined for political leadership or for professional careers, there developed an entirely separate system of education for the common people. In the late Middle Ages, cities rose to power and wealth. Their craftsmen and merchants found that elementary knowledge — the three "R's" — was of practical use to them. They therefore founded schools where their children could be taught these subjects. Since these children were not intended for the universities, Latin was not needed, and the schools therefore taught in the vernacular. These schools later became the elementary schools and were eventually taken over by the state. This elementary education originally lasted for three years but was gradually extended to eight years as technological progress raised the standards of general knowledge and the primary skills required, even of

Lockheed News Bureau

In the last 20 years our population has increased by 35 per cent, but the number of scientists has increased by 450 per cent and engineers by 225 per cent. Yet even this tremendous increase leaves us short. Fifty years ago we needed one engineer for every 1,000 workers; today the proportion is one engineer for 65 workers, and in some industries it is already one for every 20 workers.

In the final analysis, our cherished American standard of living is largely dependent on the work of a very small group of skilled professionals. In part, this is a consequence of a curious inconsistency in our attitude toward "science" as against "scientists" and "scholars."



persons in nonacademic careers. For these and humanitarian reasons, child labor was ultimately outlawed and the compulsory school age progressively extended. In the United States, as in most of Europe, this is now age 16.

As a result of the rise of labor to political power and a general movement toward greater democracy, European schools have lost much of their class character. In England public secondary schools of all types are now free of charge, and some three fourths of the undergraduates, even at Oxford and Cambridge, receive financial assistance from the government. In continental Europe, elementary education has been both free and compulsory for more than 150 years. Secondary education has been a state enterprise for almost as long, and school fees have always been moderate; in addition, scholarships have been available for the gifted poor. Secondary school fees have now largely been abolished or scaled to fit the financial resources of the parents. Even universities have become free in some countries and are inexpensive everywhere on the continent.

Separation of Talented and Untalented

But while the educational ladder has been opened throughout Europe, the separation of the two educational tracks has been retained. At 10 or 11, if they can pass the entrance examinations for academic secondary schools, children may enter the upper track — about 15 per cent achieve this. The remainder enter one of several other types of secondary schools, depending on whether they seek a general education not as demanding as that of the academic secondary schools, or whether they seek immediate training for their future careers. In this latter case they enter a commercial or trade school which gives some general education but with emphasis on vocational training.

Most of the liberal arts education given in our liberal arts colleges has been absorbed into the curriculum of the European academic secondary schools; the remainder has been incorporated into the faculties of philosophy of the universities. England has a three-year college course but it is far more centered on the student's special professional interest than is customary in our colleges.

In general, the European student is ready to begin his specialized professional studies from two to three years before his American counterpart. This is due to the early separation, in Europe, of talented children into schools which they attend for a period of eight or nine years. This long stay in a single school allows for a carefully planned curriculum in which subject follows subject in logical sequence. No choice is left to the pupil except at the outset when he may choose among three types of academic secondary schools: classical; modern, with emphasis on the sciences; and the third type which combines parts of both.

European children go to school six days a week; their school day is longer, and school vacations are shorter than here. Frequent examinations weed out the incompetent or the lazy. This rigorous intellectual discipline results in a reduction of two to three years in the time needed to educate the professional man.

A hundred years ago, Americans could be proud that we were the first country in the world to promote free secondary school education for all children. However, today free secondary school education has been achieved or is well on the way to being achieved in all of Europe. But where we have lowered our secondary school curriculum to accommodate all children, Europe has maintained the high standing of its academic secondary schools and has provided special secondary vocational and trade schools for those unable to absorb academic training.

I have seen it boasted that 83 per cent of our children of high school age attend high school and that 55 per cent graduate. These figures lose their force when we realize that many of these graduates have had no more of an education than European youngsters who attend the lower-track secondary schools.

Our high schools may excel in turning out pleasant and attractive youngsters, but their heterogeneous character makes them poor institutions for training the talented.

When the great inflow into our high schools began after World War I, some 80 per cent of the students were found incapable of absorbing the academic subjects being taught. Community pressure and political expediency forced the schools to downgrade the curriculum. Now that the great inflow into the colleges is about to begin, something similar may well happen there. Already we have a number of colleges which are hardly better than secondary schools. Already we have state universities which are required by law to admit all high school graduates from the home state, or all those with a C average — obviously not college material. This shows up in their fantastic first-year failures: in some instances 40 per cent fail at the end of freshman year. One might compare this with the 2 per cent first-year failures at Ivy League colleges where students have been carefully screened for scholastic aptitude. Requiring state colleges to admit students unable to do college work is a waste of tax money which could be used to better advantage on higher salaries to obtain better teachers.

Injustice to Talent

But even worse than wasting expensive schooling on children who are neither able nor want to absorb it, is the damage done to our talented youth who are forced to waste two or three important years of their lives in omnibus schools unless their parents are rich enough to send them to private college preparatory schools. We shall not do justice to our talented youth until we seek them out at an early age — no later than 10 or 11 — and educate them separately from the rest of the children. This need not necessarily be in a separate school; it could be in a college preparatory section of the school. But this separate schooling must begin earlier than junior high school. It should start after the fourth grade or, at the latest, the fifth grade. The schooling must be purely academic, and the teachers must have professional competence in the subjects they teach. Admission as well as advancement into each higher grade should be by examination. If possible, the school year should be extended

(Continued on page 266)

BUSINESS IN MOTION

To our Colleagues in American Business . . .

"Printed circuits!" "Printed circuits!" You hear it on all sides today. And well you might. For printed circuits have so many advantages. They have compactness as compared to conventional wiring and compactness that makes possible better assembly arrangements and techniques. Numerous, time-consuming hand operations are eliminated, there are fewer rejects, shorter, less intricate assembly lines, and fewer soldering operations, as with printed circuits a single dip-soldering operation can solder all joints at once.

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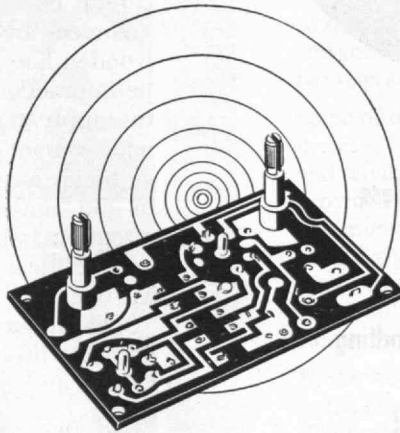
Also, the copper must be free from oxidation as it comes from the mill and without lead inclusions,

present a sufficiently clean surface so that fluxes will wet readily and when automatically soldered the solder coat will be uniform every time . . . free of skips or bald spots. Copper-to-laminate bond strength must be uniform and adequate. Revere Rolled Copper also shall exceed standard specifications as well as meet ASTM B5 specification for purity with a 99.9% minimum rating.

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TREND OF AFFAIRS (Concluded from page 244)

sional workers, whereas the corresponding figure in the United States is something like 1,000. Mr. Korol felt, however, that the most significant element of Soviet education was its absolute authority to allocate trained personnel in whatever areas it chose, leaving the individual no choice to pursue his own desires.

Dr. Hagen, formerly economic adviser to the Burmese government, discussed some of the problems involved in the transfer of technology to underdeveloped countries and the ways in which the manner of transfer affects the international position of the United States. Although it is natural to think that greatest progress can be made when the most advanced productive techniques are transferred to less developed regions, lack of needed communication, transportation, and subsidiary services places severe limits on this approach. So, too, do the economic, political, and religious views of the citizens, which cannot be lightly dismissed. Even so simple a technological advance as introduction of a shovel for a wooden hoe, in one part of the Orient, was found to be impractical because the natives had no shoes, and to supply them with footwear raised severe social and economic problems. Dr. Hagen's view was that as much harm as good may be done in attempting to aid underdeveloped countries unless thorough attention is given to the economic, social, religious, and political problems as well as the purely technical ones.

Chancellor Stratton reported that the Institute will dedicate this June the \$4,200,000 laboratory for education and research in nuclear science and electronics.

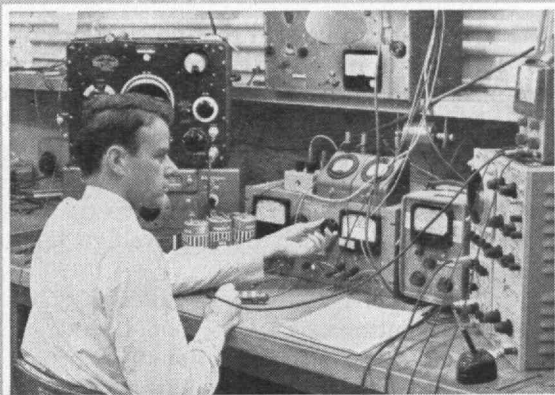
The meeting was concluded with the showing of "The Social Beaver," a new motion picture on student life at M.I.T., filmed and produced by Oscar H. Horovitz, '22, and described on page 147 of the January, 1957, issue of The Review.

THE CRYOTRON

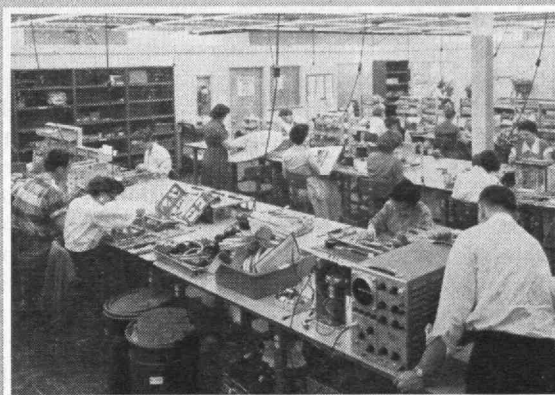
(Continued from page 249)

control of suitably applied magnetic field. The magnetic field may be produced by winding a coil around the conductor and passing current through the coil. By varying the current through the coil to control the magnetic field it produces, the resistance of the low-temperature conductor can be substantially changed rather abruptly. In effect, such a structure constitutes an electromagnet, with the straight conductor serving as the core. Current through the winding of the electromagnet is then used to switch the conducting properties of the core (which, in the case of the cryotron, is simply a straight wire of tantalum) from zero to finite value. The coil of the electromagnet, like its core, is operated at very low temperatures and is superconducting. Hence, a current once started in its winding, requires no power for its maintenance.

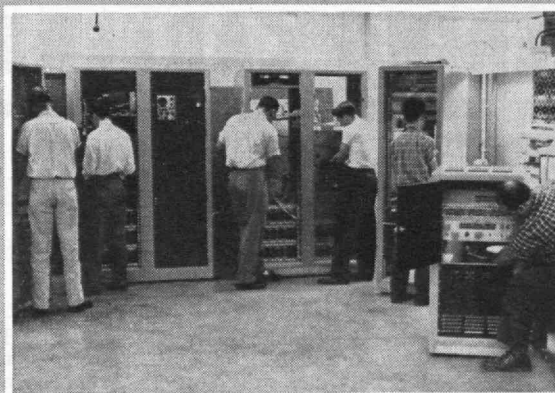
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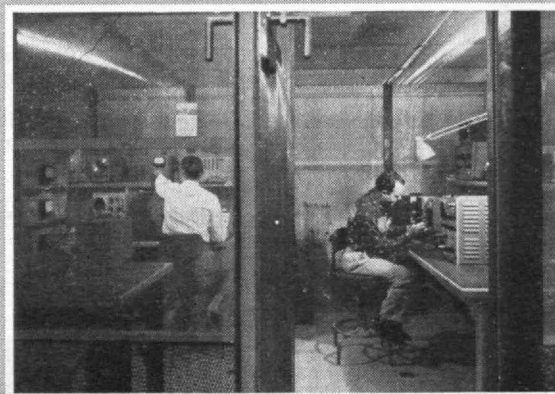
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Some of the techniques used have made possible an increased range for given levels of transmitter power and reliability of communications. Others have provided specific advantages in very long distance communications or in operational situations requiring unique signaling capabilities. Developments in navigation systems have resulted in new equipment that is suitable for the guidance of aircraft at long ranges from their bases.

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THE CRYOTRON

(Concluded from page 256)

The first comprehensive report on cryotron research appeared as an article, "The Cryotron — A Superconductive Computer Component," by Mr. Buck, and appeared in the April, 1956, issue of the *Proceedings of the Institute of Radio Engineers*. Mr. Buck's paper outlined the operating principle of the cryotron and illustrated the application of cryotrons to the design of modern, large-scale computing machines. For his paper on the cryotron, Mr. Buck will receive the Browder J. Thompson Memorial Prize of the Institute of Radio Engineers. This prize is awarded annually to the author, not more than 30 years of age, "for that paper of sound merit recently published in one of the technical publications of the I.R.E. which has been selected as constituting the best combination of technical contribution to radio and electronics and presentation of the subject."

The first data-processing equipment in which the simple, tiny device will replace electron tubes or transistors is now being built at Arthur D. Little, Inc. The first cryotron electronic catalogue will use 215,000 cryotrons. A conventional computer designed to do the same job might require 50,000 vacuum tubes. It is estimated that the cryotron elements for a large-scale computer can be made to occupy not more than one cubic foot of space. In addition, space would also be needed for the terminal equipment and for the low-temperature cryostat. Even so, considerable saving of space is envisioned.

EDUCATION FOR UNDERSTANDING

(Continued from page 248)

I believe it can be said that no single thing would do so much to reduce the shortage of scientists and engineers, to increase the understanding of the American people of the technological society in which they live, and thus to increase the probability of an intelligent solution to national problems, than to double the quantity and improve the quality of the mathematics taken by the average high school graduate.

Curiously enough, I believe that this suggestion is quite noncontroversial. Everyone believes in more mathematics. It is just a question of doing something about it. I would even go so far as to propose that every major high school (rather than only a few) offer work in calculus for the well-prepared high school seniors. This would help enormously in preparing scientists and engineers and would be an incentive for better preparation of high school teachers as well.

But if we agree on more mathematics for more students, what about more science? Here we confront a very serious current illusion which has become widespread in America. The illusion goes like this: Science has created some terrible weapons of war; therefore it is better to abandon the study of science and "return to the liberal arts."

Of course, the argument is never stated quite as baldly as that. There are always long disquisitions

(Continued on page 260)

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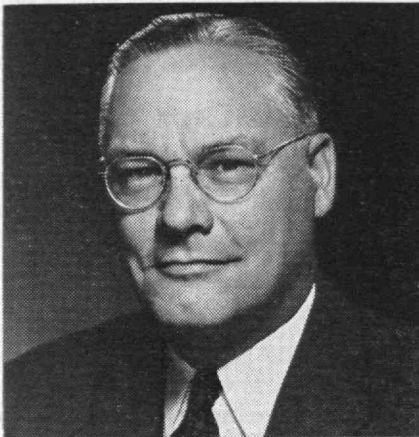
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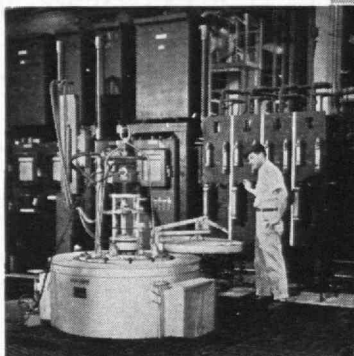
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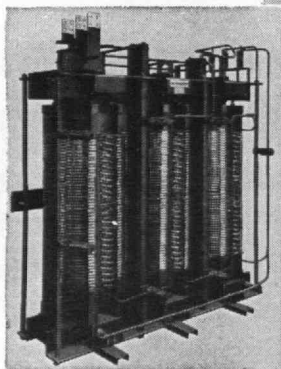


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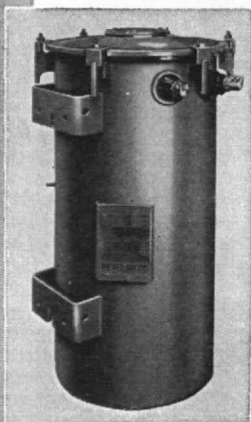
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Chester Meyer, '36, Works Manager

EDUCATION FOR UNDERSTANDING

(Continued from page 258)

about how people must learn to live together — which is certainly true. But then they come up with the astonishing and wholly unwarranted conclusion: To get along with people we need less emphasis on science and more on something else. Just how it will make the Russian leaders behave any better to tell American boys not to study science has somehow always escaped me!

The giveaway is, of course, that no two people agree on what the "something else" should be that replaces science. Some say history, some say American Constitution, others say religion, others argue for the great books; others just pass a law requiring a course in automobile driving.

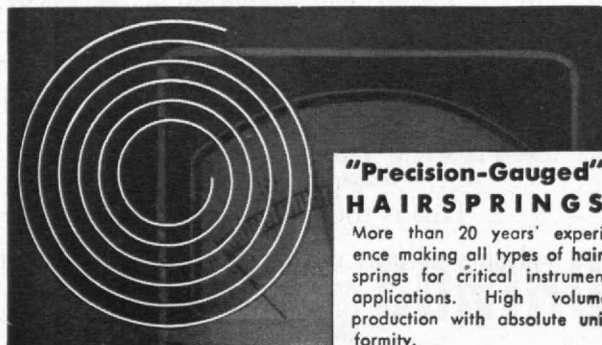
But this is an age of science and technology! Our military strength, our economic progress, the welfare of future generations, will be largely determined by our success in developing new weapons, new materials, new sources of food for hungry millions, new materials to replace our dwindling mineral resources, larger and cheaper sources of energy to do our work, new knowledge to improve human health, and new ways to take advantage of a growing technology, as well as new ways of operating, controlling, and governing the technological society we are creating.

Solving the Problem

Are these problems going to be solved by young men who have been advised against taking science because it is too hard? Are they going to be solved if the future generation cannot even understand the language in which these technical problems must be described? Even today there are great public arguments about fallout from H-bombs, freshening of sea water, guided missiles and earth satellites, fluoridation of drinking water — arguments often carried on without a trace of understanding of the technical facts involved. Can such arguments be counted on to produce sound decisions?

An advancing civilization requires an ever-larger fraction of its population to be engaged directly in scientific and technological pursuits; it requires also that a larger fraction shall be aware of the technical foundation on which modern living is based, so that intelligent decisions may be made which affect future welfare or future security.

(Continued on page 262)



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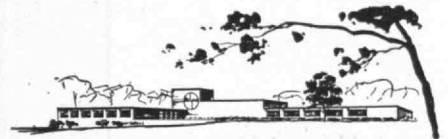
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EDUCATION FOR UNDERSTANDING

(Continued from page 260)

But, even more, a great obligation of our schools is to recognize that while in 1856 the frontiers of America were the frontiers of the West, so in 1956 the new frontiers are the frontiers of the mind. America will expand no more by geographical growth. But the frontiers of the mind are without limit.

Shall our young people be forever closed off from understanding these frontiers? Adventures more exciting than those of Columbus or Magellan or Buffalo Bill or Davy Crockett are taking place now, today, on these frontiers of science. Science is not just a way of earning a living, it is understanding how the universe is built and how it behaves.

We hear a lot about hydrogen bombs, and how terrible it was that men invented them. Well, man did not invent them — or at least the Creator beat him to it. For our own sun is nothing but a continuously operating H-bomb. The energy of the sun is produced by the conversion of hydrogen into helium — and that has been going on for five billion years. There is enough hydrogen left to keep things burning for another five billion years. The Milky Way contains many billion stars like our sun and there are many millions of other galaxies like the Milky Way, each containing a few billion suns. The sun, in fact, is rather a smallish star compared to most of the

others. And these galaxies stretch out into space so far that it takes the light from them two billion years — traveling at 186,000 miles per second — to reach the earth.

I have a friend to whom I gave a photograph — taken with the 200-inch telescope — of the great galaxy of stars known as the great Andromeda nebula. It is some two million light years beyond the boundaries of our galaxy, the Milky Way. He tells me that whenever he is depressed by difficult problems he looks at the great nebula, and his problems seem to sink to insignificance. That picture has done more to make him live happily and get along with people than a dozen college courses in social science or human relations. That is the important thing about science that people forget. The advancement of man's knowledge and understanding is essential to lifting his spirit.

Who is it that explores and pushes back these frontiers of the mind? Who leads the adventures into new areas of intellectual achievement? As I have said before, it is the educated leaders of the world. At the very vanguard, of course, are those great intellectual giants who make the great "breakthroughs" in the battle against the unknown — the Galileos and Newtons and Maxwells and Rutherfords and Bohrs and Einsteins.

Then come the larger number of men and women who back up these leaders — the officer corps, if you will — the colonels and majors and lieutenants — who

(Concluded on page 264)

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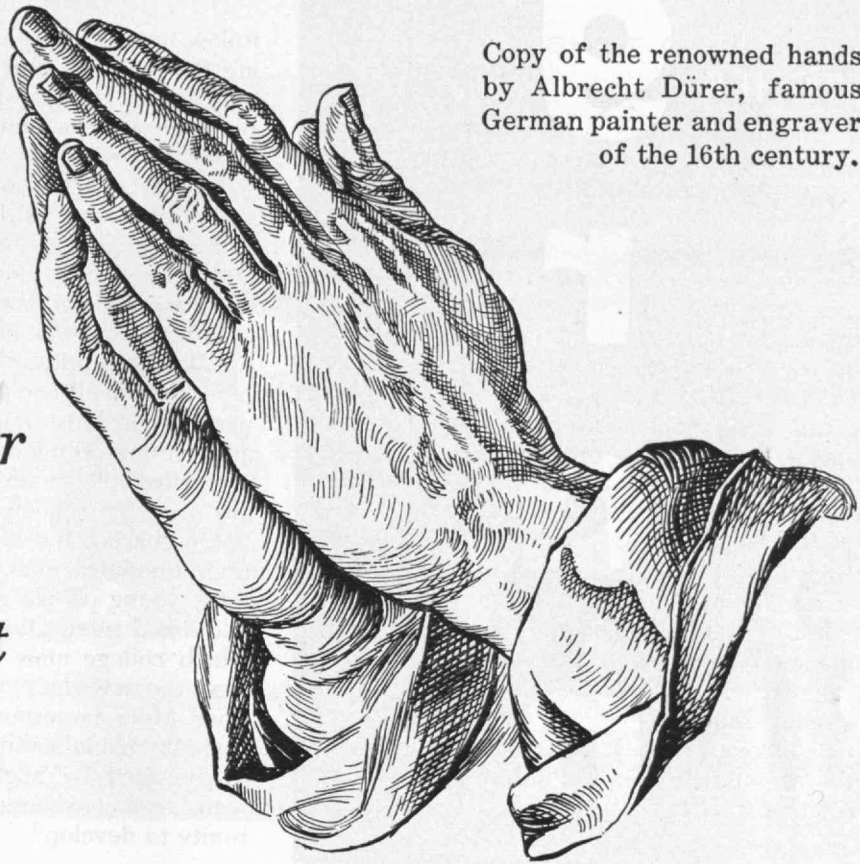
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EDUCATION FOR UNDERSTANDING

(Concluded from page 262)

follow up and consolidate the breakthroughs. These are the scientists and engineers of the country — an elite group still consisting of possibly only 1 or 2 per cent of the nation's workers. Then come the followers — particularly the great body of men and women who have progressed at least through high school and who do the most to set the tone of the nation's intellectual, cultural, moral, political, social, and business activities. How are we doing in educating these various groups?

We are doing moderately well in making educational opportunity available to everyone. Nearly all of our young people (except the handicapped) in many states finish high school. In California, for example, some 50 per cent of the high school graduates will enter college next fall. Fifty per cent! No longer are our high schools swamped with those who are not preparing for higher education; higher education is now the goal, the hope, of the majority! Are these young people going out well prepared for the additional intellectual toughening and development which college aims to give? Are they prepared to meet the new rigors with enthusiasm and determination? More important, have any boys and girls of first-rate mental caliber been discouraged in school — discouraged by neglect, because their full talents were never challenged, were never given an opportunity to develop?

Encourage the Leaders

How are we doing, in other words, in encouraging the leaders? The Einsteins can take care of themselves. But the thousands of young men and women who constitute the top 5 or 10 per cent of the population in intellectual ability — are we finding and encouraging them to find their talents and interests and develop them to the utmost? I can think of no more important task in the world. The course of future American history will depend far more on how well our homes and schools and colleges perform that task than it will depend on what happens to the stock market or on who won the election. For our schools and colleges have custody of the community's brain power, of the intellectual resources of the future. It is those resources which *determine* the future.

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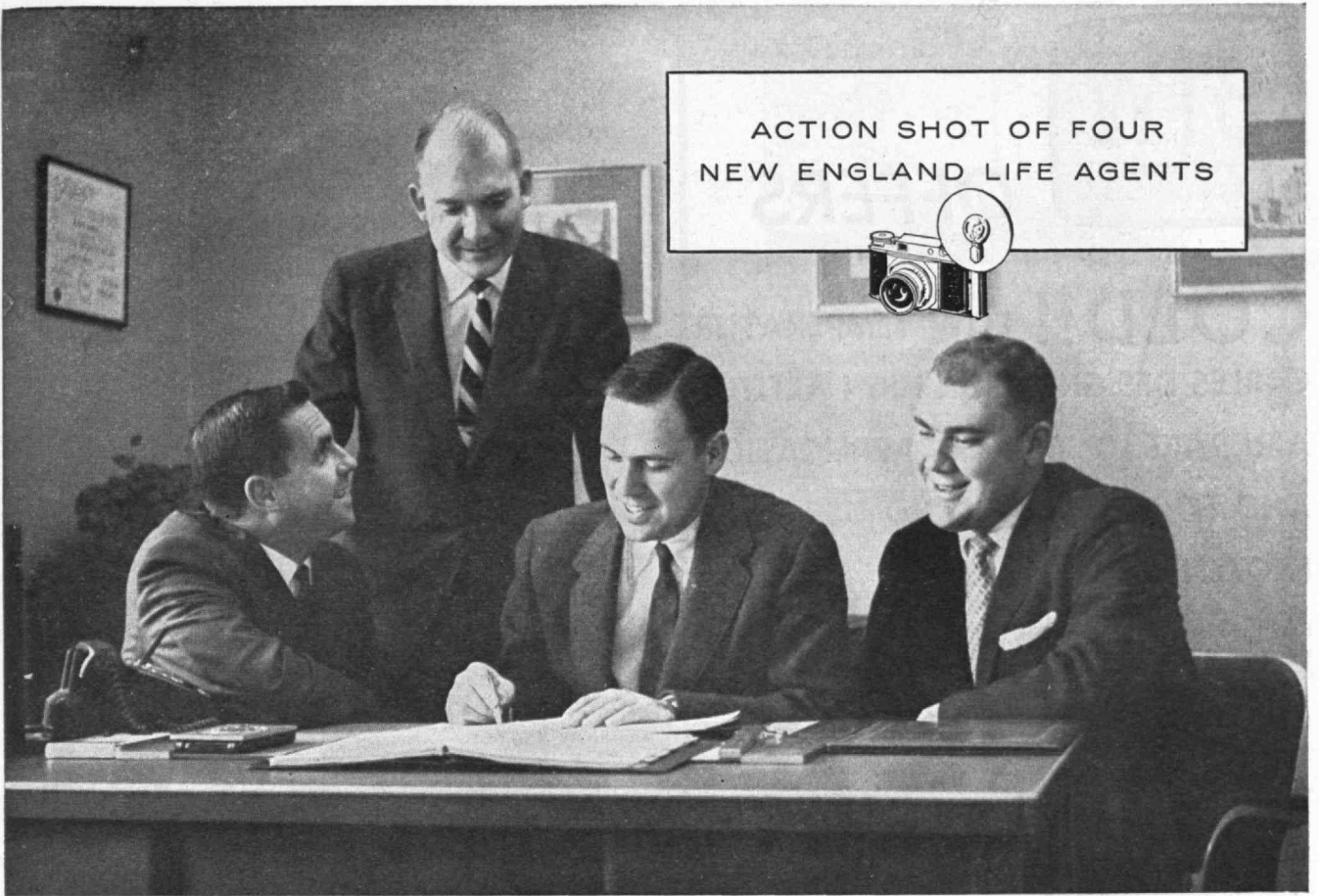
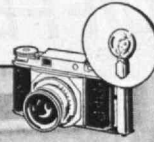
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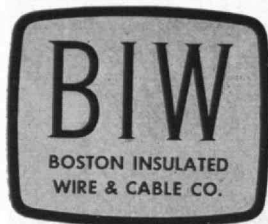
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SOX4-20	20	4	.310
SOX7-20	20	7	.365
SOX9-20	20	9	.415
SOX2-18	18	2	.350
SOX3-18	18	3	.365
SOX4-18	18	4	.395
SOX7-18	18	7	.390
SOX9-18	18	7	.390
SOX2-16	16	2	.380
SOX2-14	14	2	.450

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EDUCATION OF TALENTED CHILDREN

(Continued from page 254)

to 210 days. There is no other country of comparable civilization where children go to school for only 180 days as they do here. This may have made sense when we were an agricultural country and children were needed to help on the farm. But our long vacations make no sense today, especially when we consider how rapidly knowledge is increasing and how much more a child must now learn to become truly educated. The more we know, the more there is to know.

The undue length of professional education in America is a significant element in our trained manpower deficit. Today, the American professional man will complete his education when he is between 25 and 26, and for most there will have to be added two additional years of military service before they can become self-supporting. All of this becomes particularly onerous in the United States where early marriage is part of our social pattern. Surely, we must do all we can to allow our talented youth to move through their schooling at their own rate of progress and not retard them by the pace of the average or the slow learner.

I am aware that any change in the American public school system will meet opposition. Special schooling for the mentally superior will be branded as "undemocratic" and as "class" education. It will be considered unfair to give the talented child education superior to that offered the average. It will be said that the separation of children according to mental capacity will deny them valuable experience in living together with other children of varied background and ability, and that this constitutes an important ingredient in the smooth functioning of American democracy—so it will be said. None of these objections, however, bears critical examination.

It would, indeed, be undemocratic to propose a cleavage along class lines, but not one along the lines of natural ability, which hardly anyone will claim is limited to the children coming from better homes. It is, however, often forgotten that we already have just such a separation along class lines in large American cities where schools draw their pupils from a particular neighborhood rather than from the whole population, as is the case in smaller towns. Neighborhoods in America are usually homogeneous, at least as far

(Continued on page 268)



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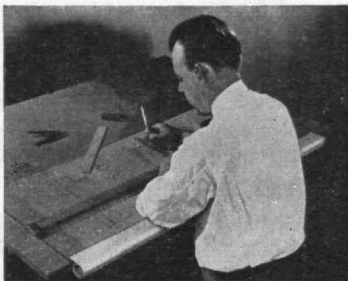
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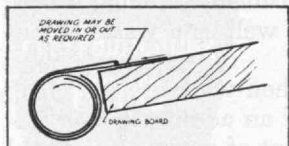
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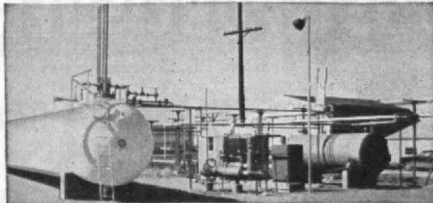
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EDUCATION OF TALENTED CHILDREN

(Continued from page 266)

as the finances of families are concerned. Parents in better class neighborhoods generally succeed in obtaining better schools for their children. Finally, we must not forget that well-to-do parents always have it in their power to assure their children a good education by sending them to private preparatory schools. But the talented poor child must depend solely on the public school. Education in a democracy must not only be democratic, it must also be education.

Education is not a commodity such as a house, a television set, or an automobile. Everyone can use and enjoy a house, a TV set, or a car; it would indeed be unfair if the state distributed these commodities free of charge but limited them to only part of the population. The ability to use and enjoy academic training, on the other hand, is not universal; therefore, to limit it to those who can benefit from it is not unfair; but, to deny it to the minority who can use and derive benefit from academic training is both unfair and undemocratic, as well as a waste of our most valuable national asset.

Is money the problem? Then what are we going to do with all our wealth? If an additional four billion dollars a year — 1 per cent of our gross national product — makes the difference between good teachers and mediocre ones, good schools and poor ones, can we afford not to spend that sum? Is our end aim merely to become more wealthy, to acquire more things?

A Proposal

Can we afford to make our talented children remain in school any longer than they have to, when our schools are already so overcrowded and the teachers so few?

I suggest that industry, together with our educational foundations undertake the setting up of model academic secondary schools in perhaps 25 different centers in the United States. These schools would be on a par with our best academic secondary schools. They would be free; the ability to pass an entrance examination of a kind which would weed out those not mentally capable of absorbing an academic secondary education would be the only requirement.

(Concluded on page 270)

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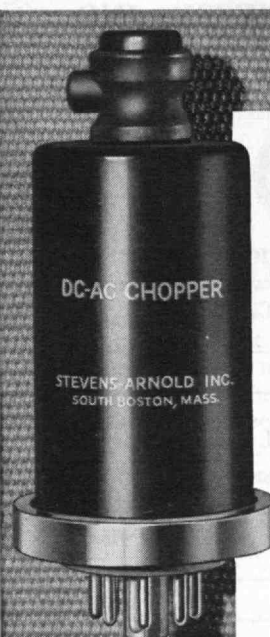
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Wilfred Roth
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EDUCATION OF TALENTED CHILDREN

(Concluded from page 268)

The schools would be staffed by teachers truly capable of teaching talented children; teachers whose qualifications place less emphasis on training in teaching *methods* and more on graduate study in their fields. The competence of European secondary school teachers, based as it is on years of postgraduate study in their fields, is one of the main reasons why they can teach as much in 12 years as ours do in 14 or 15.

Teachers' salaries in these schools would be in accord with the high scholastic qualifications required and, therefore, equal to those paid for comparable positions in industry. Such salaries would attract competent teachers.

These model schools should aim at a ratio of at least one teacher for every 20 pupils. One of the reasons why the private English boarding schools, such as Eton, Harrow, and so on, contribute so large a percentage of England's leaders is their ratio of teachers to pupils — one for every 12 students.

The schools would start with the fifth grade so as to have the pupils ready for college at 16. To do this, it may be necessary to provide a choice: students could complete the course the regular way in seven years, or they could finish in six years by taking extra courses during three summers. We must find a way for our children to attend school for more than the present 180 days. Lengthening the time in school might most easily be done through the medium of voluntary summer courses.

Teachers in these schools would be given no extra-curricular work of any kind, because a teacher, as does any professional person, requires time for thought and study. The schools would be scholastic institutions, so social activities would be kept at a minimum.

The management of these schools, qualifications and salaries of teachers, entrance requirements, curricula, and standards would be left to an independent body not connected directly with the donor. But I see no reason why the schools could not be given names to indicate the corporation, or industry or labor organization — for labor ought to participate in this endeavor no less than industry — which contributes financial support. This seems to me fair and legitimate, and even desirable; it would win friends for industry as a whole, and for the donor in particular.

I estimate that the cost of operating each model school for a period of five years will be about \$10,000,000. At the end of that period the community ought to have an option to take over the school, provided it agrees to continue the high scholastic standards set under private management.

These model schools would demonstrate what could be accomplished by competent teachers, a proper curriculum, and an adequate school year. They would be goals and living examples of what can be done by the community for the education of its children.

These are my suggestions. Others can and will be made. But let us make a start.

and the prophet replied:

*"It is well to give when asked, but it is
better to give unasked, through understanding."**



Gifts by Will

TO THE Massachusetts Institute of Technology

The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it is better to give unasked, through understanding;

And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;

Therefore give now, that the season of giving may be yours and not your inheritors'."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and project his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

But the search, the finding, and the anticipated accomplishments are not enough; for without the properly-worded record, man's plan for the future may go awry. Hence the prophet's importuning, "—give now," should be heeded. The giving need not be an immediate physical transaction, for written directions replace the spoken word when the speaker is no longer present, and a donor can frequently make by will a gift which is larger than he can make while living. Truly, *"it is well to give when asked, but it is better to give unasked, through understanding."*

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Massachusetts Institute of Technology

Cambridge 39,

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* "The Prophet" by Kahlil Gibran

ALUMNI AND OFFICERS IN THE NEWS

New Posts . . .

In addition to the 21 Alumni recorded on page 243, other Alumni and members of the Institute staff advanced to new posts include:

E. MCKENDREE HAYDEN'16 as special assistant to the president of the Stanley Chemical Company of East Berlin, Conn. . . . JOHN J. HEALEY'21 and MANSON BENEDICT'32 as directors of the American Institute of Chemical Engineers . . . JOHN B. RUSSELL'28 as manager of the Electronics Laboratory of the Defense Electronics Division, General Electric Company, Syracuse, N.Y.

HOWARD A. ROBINSON'30 as chairman of the Physics Department, Adelphi College, Garden City, N.Y. . . . JAMES H. KIMBERLY'34 re-elected as president of the Sports Car Club of America . . . RUDOLPH W. HENSEL'41 as chief of the Propulsion Wind Tunnel, Arnold Engineering Development Command, U.S. A.F., Tullahoma, Tenn. . . . EUGENE A. MARCH'41 as assistant manager of the Crucible Steel Company's Sanderson-Halcomb Works, Syracuse, N.Y.

FREDERICK W. GANDER'42 as director of the Du Pont Company's Yerkes Research Laboratory . . . ALVIN C. BRODIE'43 and THEODORE P. HEUCHLING'46, respectively, as vice-presidents of Sales and Engineering of Feedback Controls, Inc., Waltham, Mass. . . . JU CHIN CHU'46 as technical director of Chemical Construction Corporation. . . . EDWARD W. FORTH'47 as vice-president and general manager of the AMF Cycle Company, Little Rock, Ark.

OLIVER W. HAMILTON'47 as a corporate economist of The Budd Company, Philadelphia . . . THOMAS J. CONNOR'56 as executive director of the Massachusetts Association for Retarded Children . . . BILLY E. GOETZ, Professor of Industrial Management, as vice-president of the Academy of Management.

Books . . .

Uranium Prospecting by Hubert L. Barnes'50. A practical book about uranium prospecting, designed for immediate use. It tells what uranium prospecting is really about, and is especially valuable in its discussion of uranium ores, geological occurrences of uranium, and field conditions. (New York: Dover Publications, Inc., 1956, 117 pages, \$1.00.)

Scientific French by William N. Locke, Professor of Modern Languages; in charge of the Department. A scientific grammar which provides students, engineers, chemists—everyone working with French technical literature—with the tools needed to understand the scientific French sentence, vocabulary, and phrase. (New York: John Wiley and Sons, Inc., coming in 1957, 63 pages, \$1.25.)

A Proposal by Max F. Millikan, Professor of Economics, and Walt W. Rostow, Professor of History, members of the Center for International Studies. An argument for a foreign aid policy that is consonant with our economic resources. They feel that aid should be used to help create national communities in which a sense of progress is the solution for tension and violent solutions. (New York: Harper and Brothers, 1956, 170 pages, \$2.75.)

Articles . . .

"Professional Collaboration" by Vannevar Bush'16. An examination of some of the responsibilities and opportunities of the professions, particularly those of medical men and scientists in these days of great hazard and promise. (*Science*, January 11, 1957.)

"Effect of an Axial Cavity on the Temperature History of a Surface Heated Slab" by Joseph I. Masters'49 and Seymour Stein. A theoretical study is made of the surface temperature of a front heated slab in the presence of small holes drilled to within a fraction of a centimeter of the heated surface. (*The Review of Scientific Instruments*, December 1956.)

"Rotating Electrometer for Comparative Work Function Measurements" by Henry H. Kolm'50, Lincoln Laboratory. An apparatus for measuring work functions by the Kelvin method is described in which the customary vibrating motion is replaced by rotary motion. (*The Review of Scientific Instruments*, December 1956.)

"Field Homogeneity and Pole Distribution" by Francis Bitter, Professor of Physics, and James D. Bjorken'56, members of the Department of Physics and Research Laboratory of Electronics. The design of a magnet for producing a uniform field is described. (*The Review of Scientific Instruments*, December 1956.)

"Microinhomogeneities in Magnetic Fields" by Francis Bitter, Professor of Physics, and Howard H. Brown, Jr.'56, members of the Department of Physics and Research Laboratory of Electronics. Small variations in the fields of magnets, caused by structures or domains in the pole faces, were investigated by moving a small coil in a circular path. (*The Review of Scientific Instruments*, December 1956.)

"Chemical Aspects of Enzyme Inhibition" by Irwin W. Sizer, Professor of Biochemistry; acting in charge of the Department. Use of chemical reagents as enzyme inhibitors. The design and synthesis of new inhibitors offers great promise when applied to the control of undesirable organisms and to the prevention and cure of disease in the immediate future. (*Science*, January 11, 1957.)

Obituary

ZENAS W. BLISS'89, January 10
BENJAMIN F. WILSON'89, December 15, 1956

ARTHUR E. FOWLE'93, March 14, 1956

JOHN W. COOKE'95, May 9, 1956*

WILLIAM T. HALL'95, January 4*

MORTIMER C. PRIEST'96, July 11, 1952

LUZERNE S. COWLES'97, December 3*

WILLIAM C. POTTER'97, January 2*

CHARLES E. A. WINSLOW'98, January 8*

FRANCIS B. DUTTON'00, October 27, 1956*

ALBERT T. LEATHERBEE'00, November 13, 1956

CHARLES E. SHERMAN'00, May 19, 1955*

HARRY G. FOLSOM'01, September 21, 1956

ALFRED R. C. GATZENMEIER'02, December 22, 1956*

RICHARD M. FIELD'03, February 4, 1956*

JAMES P. BUCKLEY'04, October 28, 1956

GEORGE S. RADFORD'05, December 29*

HARRY W. BROWN'06, November 19, 1956†

JAMES H. KIDDER'06, July 7, 1956

HERBERT W. HILL'07, April 22, 1955*

CHARLES W. NUTTER'07, date unknown*

STEPHEN C. LYON'08, December 10, 1956*

ARTHUR K. POOR'08, November 11, 1956*

BANCROFT HILL'11, January 5†

SILAS M. RATZKOFF'11, August 3, 1956*

MORRIS M. LEONARD'13, June 13, 1956

ALBERT P. NELSON'13, December 31, 1956

EDWARD E. SMITH'13, September 8, 1956*

ERNESTO GOMEZ-ARZAPALO'16, 1955

AMORY L. WILLIAMS'18, December 24, 1956

LEO D. KAHN'20, October, 1956*

JAMES H. DODGE'21, October 27, 1956*

FRANCIS T. WHITWORTH'21, January 16

EDWARD FOX'23, 1954

WILLIAM A. GALLUP'23, January 14

WILLIAM G. DE KOCH'24, July 30, 1954*

GEORGE S. RADFORD'05, December 29*

HAROLD A. WILLOUGHBY'26, December 22, 1956

ROMEO E. BOSSI'28, April 18, 1956*

THOMAS K. VINCENT'31, September, 1956*

CHARLES E. SCOTT'35, October 17, 1956

CLARENCE J. WILLIAMS, JR.'35, December 24, 1956

HENRY W. HOFMANN'41, September 18, 1956

JOHN S. AREND'42, January 15

DONALD P. CAMPBELL'43, January 15

BRUCE BAILEY'49, August 26, 1956*

JOHN R. STANLEY'51, June 18, 1956

BJORN T. STRANGE'53, September 15, 1956

WILLIAM E. EDGERTON'55, August, 1956

DALE S. GILLETTE'55, December, 1956

* Further information in Class Notes

† In February 1957 issue

‡ In Baltimore notes

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Baltimore

Since our President, Clint Conway, has become a banker, we seldom see him at our Monday luncheons at the Engineers Club. Try to make it once in a while, Clint! Bob Lacy is going to fly to Mexico City with Mrs. Lacy on January 23 for a few weeks' visit. Watters Pagon's daughter is flying to Arizona for a visit this month and several others of us would like to fly away for a visit somewhere as the weather is beginning to get nasty around here.

It is with regret we announce the passing of Bancroft Hill¹¹, on January 5 at his home on Sulgrave Avenue. Since his retirement as president of the Baltimore Transit Company in 1945, he kept himself busy as a consulting engineer and by inventing devices to aid crippled children. Our sincere sympathy to Mrs. Hill. — RANDOLPH J. PETERSEN²⁷, *Secretary-Treasurer*, 407 Deepwood Road, Baltimore 18, Md.

Boston Luncheon

The M.I.T. Boston Luncheon Club met December 20 at the Union Oyster House. Professor William R. Weems, Director of the Industrial Liaison Office at M.I.T., spoke to the Club on "Korea, 1956." Professor Weems was born and grew up in Kaesong, Korea, and was loaned to the University of Minnesota when he was sent to Korea in 1955 to participate in a program of upgrading the quality of university education, principally in the fields of engineering, medicine, and agriculture. The Seoul National University was chosen for modernization in these areas, to serve as a model to guide the Koreans, who had for many years been suppressed by the Japanese. Part of the program consisted of assigning Korean university faculty to universities in the United States for periods of approximately two years to gain first-hand experience with United States methods of education.

Professor Weems said that the Korean economy is in serious trouble, due principally to a lack of energy-producing resources such as coal, oil, or water power. A beginning has been made toward atomic and solar research to correct this deficiency, and the United States is aiding by setting up three new steam power generating plants. An important factor in the unstable economy is that Korea is split in two, with South Korea containing 25 million people and being almost entirely agrarian, whereas North Korea has abundant power, mineral, and timber resources, but only eight million people. The United States is partially supporting the economy by putting in \$300,000,000 per year, mainly to support the South Korean Army.

Public health in general is not too bad, with the main diseases being tuberculosis and leprosy. The level of engineering education is relatively low, due to the suppression of advanced learning among Koreans by the Japanese over many years. However, the people are generally literate. The Korean culture is very old and well established, but is gradually passing away under the influence of Westernization. The average city street scene shows this effect, with many people in Western dress, but others in the traditional dress. Although Confucianism is the dominant philosophy, it seems to be inadequate for the people's needs, and Christianity is becoming increasingly a factor, with 10 per cent of the Koreans Christian at the present time. Concluding his talk, Professor Weems showed a group of colored slides taken in Korea.

The M.I.T. Boston Luncheon Club met January 17 at the Union Oyster House. Considering that we had just undergone two weeks of snow, ice, and sub-zero temperatures, the Club enjoyed a remarkably good turnout to hear the speaker, Professor Walter A. Backofen⁴⁶, Assistant Professor of Metallurgy at the Institute, who talked on "Unused Reserves of Strength in Metals." Professor Backofen discussed one of the important phases of research in metallurgy, which is the effort to obtain higher quality and higher strength metals with greater resistance to fatigue and corrosion, and the ability to retain these qualities under greater temperature ranges. Of much importance is the property of high strength. It seems that our best metals today are still far short of the ultimate theoretical strength by a factor that may range from five to more than 100. The highest strength structural steel in commercial use today is a 250,000 psi steel finding used in airplane landing gear. Theoretically, if metal used were structurally perfect, the strength level could be over 1,000,000 psi. The basic problem is imperfection in atomic structural arrangement within the metal crystals, with the atom packing plan having a "dislocation" of atoms. The theory of "dislocation" and its relationship to metal strength originated in 1934. Strength in metal is a measure of the metal's resistance to deformation, basically speaking, and deformation is due to the movement of dislocations among the atoms. The theory of "dislocation" holds that atoms slip by each other during deformation of the crystal due to propagation of slip from an original weak point caused by a dislocated atom.

The methods under study to build up strength levels are (1) avoiding all dislocated atoms, and (2) immobilizing dislocated atoms or weak spots. Under immobilization of weak spots, heat treatments and alloys have been used. The more immediate practical method of obtaining better properties is the second,

and research is being done on scientific methods of forming new alloys to that end. — C. VINCENT VARPI⁴⁸, *Secretary*, 240 Sydney Street, Cambridge, Mass.

Cleveland

On Wednesday, December 27, one of the most successful undergraduate luncheons was held at the University Club. In place of the usual program, a buffet lunch was served and the members and guests sat at individual tables rather than one large formal table. Refreshments were available, and the whole tone of the meeting was an informal get-together where one could sit down with friends and stay long. As a result there were more than 60 members and guests in attendance, and the meeting broke up at approximately 1:30 P.M.

Following the luncheon a few casual remarks were made by members of the various classes concerning events now going on at M.I.T. Eighteen undergraduate students attended so that each class now attending the Institute was well represented.

The next scheduled meeting of the winter season was the Annual Ladies' Night, held Thursday, February 14, at the University Club. This was a dinner meeting, and we were fortunate in obtaining Professor Pietro Belluschi, Dean of the School of Architecture and Planning, to be our guest speaker.

For those of you who are temporarily away from Cleveland and have a chance to read these notes, we wish to offer the Cleveland Alumni Directory, published this fall, listing all of the names and addresses of the local Alumni. These copies are available at \$1.50 each and can be obtained by writing the Secretary at the address given below. — JAY P. AUWERTER³⁸, *Secretary*, Atlantic Automatic Company, 18502 Syracuse Avenue, Cleveland 10, Ohio.

Houston

The South Texas M.I.T. Club had a very fine meeting at the Houston Club on November 22, 1956. More than 75 Alumni and their wives were present to hear Professor S. Curtis Powell bring us up to date on goings on at the Institute, and welcome in a slate of officers. Elected were: President, George Morgan²⁰, Gulf State Utilities, Beaumont, Texas; Vice-president, Tom Jenkins³², Fish Engineering Company, Houston, Texas; Secretary-Treasurer, Sid Atlas⁴³, Atlas Air Conditioning Company, Houston, Texas. We all wish to give our thanks to the outgoing officers; Dick Lyons¹⁷, who has been most unselfish in time and money, and Duke Selig³³, who has been the Houston landmark for many, many years.

If we have any Tech men in this area,

whom we have not contacted, please get in touch with the secretary. Also, anyone passing through, give us a call, and we'll be glad to toss out some Texas Hospitality. — **SID ATLAS**'43, *Secretary-Treasurer*, Atlas Air Conditioning Company, 3779 Richmond Avenue, Houston, Texas.

Louisville

The M.I.T. Club of Kentucky wound up 1956 with a flurry of activity. A fall dinner meeting at Thanksgiving time gave us an opportunity to bring the ladies out, and the attendance again pointed out the advantage of this arrangement. The SAGE film provided most of the program for this meeting, and our very capable projectionist, Arthur Cary'34, demonstrated his engineering ability by running the entire film on rewind with some amazing sound effects. At this meeting, it was suggested that an historian be appointed to record early Club history while those who are familiar with it can still recall the events. As a result of this suggestion, Fred Stover'10 and Mel Sack'28 are now working on this project, both with the title of Co-Historian of the Club.

At our December luncheon meeting, the Club elected officers for the coming year. They are: President, James R. Kane'44, Vice-president, Walter Weeks'24, and Secretary-Treasurer, John D. Harms'48.

The annual Wassail Bowl at Christmas time capped our season. This event, held at the Louisville Country Club, brought out a very good crowd and continues to be our most popular event. Among those members attending recent meetings are: Fred Stover'10, John R. Poteat'18, Craig P. Hazelet'18, Albert L. Entwistle'26, Melvin Sack'28, Arthur Cary'34, George Morrisette'35, Frank P. Wardwell'38, Richard E. Christie'39, John L. Dawson'44, James R. Kane'44, Howard D. Edwards'45, John D. Harms'48, E. J. Schickli, Jr.'50, Byron F. Burch'51, John L. Copenhefer'52, D. R. Goodman'40, Eugene Koch'51, Walter J. Weeks'24, Elmer Skonberg'29, William H. Barnes'38, Harry Whittaker'40, Arnold Varner'47. — **JAMES R. KANE**'44, *President*, Kane Manufacturing Company, 2408 Douglass Boulevard, Louisville 5, Ky.

Milwaukee

As I sit here in the middle of a good snow storm, in anticipation of a welcome vacation to Cuba and Jamaica tomorrow, I trust you will forgive me if these notes are somewhat abbreviated. The high-spot of our Club's December activities was an extremely successful luncheon meeting held at the University Club for the students from our area who were home on leave for the Christmas holidays. This December 27 meeting was attended by the following members: George Anderson, Jack Ballard, Bill Bohlman, Frank Briber, Jr., John Colby, Robert Cotton, Phil Cristal, Dick Fleischer, Arthur Hall, Maurice James, Harold Koch, John Koch, Chet Meyer, George Pollock, Bill Schield, Dave Smith, Charlie Sollenberger, Elton Staples, Pete Stark, and Emerson Van Patten.

Our student guests came from as far as Racine, Madison, and Sheboygan Falls.

They were: William Alexander, Griff Anderson (George's son), Robert Cooper, Alan Czarapata, George Harrison, Joseph Kappl, John Maier, Theodore Martin, Robert Mertz, Robert Pfieger, Dean Karnopp, Charles Staples (Elton's son), and Ronald Wempen. In a well-organized talk, Bill Alexander gave the "old grads" a thumbnail sketch of what the undergraduates are doing and thinking at the Institute today. I'm certain that it's safe to say, "A good time was had by all." — **WILLIAM H. SCHIELD, JR.**'46, *Secretary*, 2723 E. Newton Avenue, Milwaukee 11, Wis.

New York

The Class of 1911 utilized the facilities of the M.I.T. Club of New York for its Hobby Show and luncheon on January 8. Drawings, paintings, and works of interest, which were prominently displayed, were most fascinating.

The Westchester Section of the M.I.T. Club held its January 17th Dinner Meeting at the Scarsdale Country Club under the chairmanship of Thomas F. Creamer'40, who arranged for M.I.T. Dean of Humanities, John E. Burchard, to discuss the function and purpose of humanities courses in relation to the technical.

The M.I.T. Club of New York held its March 7th Technical Meeting at Longchamp's, 42nd Street and Lexington Ave., New York City. The chairman, Anton E. Hittl'36, arranged for E. V. Murphree'23, Special Assistant to the Secretary of Defense, and former president of Esso Research Labs, to be our guest speaker. Mr. Murphree's topic, guided missiles, was most engrossing and informative. We were indeed pleased to see so many of our friends at this affair and offer our sincere congratulations to the committee for its skillful arrangements.

Irving D. Jakobson'21 presented the Long Island group with a superbly exhilarating evening. As chairman, for the second year in a row, he arranged a lecture and film at the Little Theater of Adelphi College. We were indeed fortunate in securing Paul Cherney, Technical Advisor of the Submarine Research Institute, Cannes, France, as guest speaker. Through the medium of film, we accompanied the crew of the *Pegasus* on a trip "Exploring the Secrets of the Underwater World." We were afforded the thrilling experience of viewing underwater life and wrecks in the Mediterranean and Red seas through the torpedo tube of the *Pegasus*. — **HARVEY KRAM**'42, *Secretary*, 101 Barnyard Lane, Roslyn Heights, L.I., N.Y.

Northern New Jersey

The February meeting, held on Thursday, February 7, 1957, at the Hotel Suburban, East Orange, N.J., was the Club's annual Ladies' Night dinner meeting. A large turnout of members and their wives, as well as a group of "stags," enjoyed the roast beef dinner and the outstanding program.

George Kreskin, who at 21 is one of the country's top five hypnotists, presented an evening's entertainment. Mr. Kreskin started with a few non-hypnotic stunts to

warm up the audience. He then proceeded to a mass-hypnosis demonstration, followed by instantaneous hypnotic induction of individual subjects. Mr. Kreskin avoided the spectacular "catalepsy on chairs" stunt and the other time-worn feats which have become the "stock-in-trade" of the stage hypnotist. The subjects as well as the audience had an enjoyable evening.

At the Board of Governor's meeting, A. R. Shelby was appointed chairman of the Nominating Committee for Officers for next year. The long-range planning committee presented preliminary data from a survey made of 24 M.I.T. clubs throughout the country. It is felt that much good to the Club and the Alumni in our area will come of this and other surveys being conducted. — **ROBERT M. GOULD**'45, *Assistant Secretary*, 15 Wellington Road, Livingston, N.J.

Puerto Rico

The membership of the Board of Directors for 1957, as decided upon during the Club's last luncheon meeting, December 1, 1956, at the Reserve Officers' Beach Club at Puerta de Tierra, San Juan, is as follows: President, Ulises Barros Loubriel'55; Vice-president, Angel A. del Valle'43; Secretary, A. C. Kayanan'42; Treasurer, Telésforo Carrero'46; Members, Antonio Romero'12, Emilio José Venegas'49, Manuel Viñas Sorba'45.

The Club had several meetings last year which were held in different places in the Island and which featured short interesting programs in addition to the usual familiar get-together activities, enjoyable meals, and plenty of sunshine. The new Board contemplates the same or better performance this year. — **A. C. KAYANAN**'42, *Secretary*, P.O. Box 9447, Santurce, Puerto Rico.

Rochester

The Club's annual Christmas luncheon was held December 27. We had a good turnout of 42 Club members, and joining us as guests of the Club were 20 boys from our area, now students at M.I.T. As in previous years we were also fortunate to have with us Professor A. A. Ashdown from the Department of Chemistry at the Institute. One student from each class was asked to speak briefly concerning his impressions of M.I.T., and Professor Ashdown concluded the talks with a brief run-down on life at M.I.T. these days. The following father and son combinations were on hand at the luncheon: Richard M. Wilson'30 and Stewart W. Wilson'59; Ralph M. Peters'30 and Ralph M. Peters, Jr.'55; Robert M. Phinney'04 and Robert A. Phinney'58; Henry R. Couch'20 and Henry R. Couch, Jr.'59.

The personal solicitation campaign for the Alumni Fund, under the direction of President-Elect F. J. Kolb, Jr.'38, took place during the first week in February. Joe Conrad was in town on January 31 at a kick-off dinner for the solicitors. Approximately 200 Alumni were contacted during the drive. We are happy to report further honors for Clarence Wynd'28,

who was recently elected president of the Rochester Chamber of Commerce for the year 1957. — JAMES K. LITZWITZ'42, *Secretary*, 191 Rogers Parkway, Rochester 17, N.Y.

Taiwan

The December 7, 1956, meeting of the M.I.T. Club was held at the Guest House of Yang Min San District. Members present were: Z. Y. Chow, J. H. Keatley (speaker), C. Y. Cheng, K. K. Choong, S. W. Hsu, T. K. Kang, Chi Ouyang, T. B. Chang, S. M. Lee, J. I. Connolly, P. T. Mar, C. T. Chien, C. J. Chu, R. S. Hsu, H. T. Lin, W. H. Russell, C. L. Wu, T. C. Cheng, M. C. Chang, E. A. Dale, T. S. Chin, M. C. Chen, K. P. Hu, J. H. Lo, H. S. Sung, J. C. Huang, H. L. Hsieh.

The American University Club asked the various alumni groups to render the songs of their *alma mater* on December 21, 1956, in order to make the club meeting more interesting. But none of the M.I.T. Club members volunteered to go on that song fest.

Theodore T. Miller, Chairman of the M.I.T. Alumni Fund Board, wrote to us: "So said President Killian in the May 17 issue of *Life*. No doubt you read it. Basically the plan of action was to make it financially possible for the cream of the high school graduates not now going on to college to do so, preferably by the use of private funds. One other item in that thoughtful proposal probably did not escape your attention. Expansion means new investment at the rate of about \$50,000 per additional student. . . ." The conclusion is informing each member of the M.I.T. Club of Taiwan to contribute as much as he can.

The December 30, 1956, meeting was in Keelung, aboard the U.S.S. *St. Paul*, with the following members present: Z. Y. Chow, C. T. Chien, S. W. Hsu, T. K. Kang, H. S. Sung, C. L. Wu, E. A. Dale, T. S. Chin, R. S. Hsu, H. T. Liu, S. M. Lee, I. C. Huang, C. Y. Cheng, K. P. Hu, W. H. Russell, H. L. Hsieh, T. B. Tsang, and the speakers were Captain D. W. Knoll and Dr. S. M. Lee.

Following the delicious refreshments, Captain Knoll got up and said: "I am happy to see you all here, and note that you are brave enough to come to visit the *St. Paul* despite the heavy rainfall. Being M.I.T. Alumni, rain, of course, is only a small item. I want to thank you all for coming and hope that I shall have the opportunity of welcoming you again. Now, I have the pleasure of asking President Lee to say a few words to us."

President Lee, after the salutation, said: "I just want to say how much we appreciate this hospitality, as we have been hoping for this opportunity to visit the *St. Paul* for a long time. We can still remember the inspiring speech which Captain Knoll made at Christmas, and today we are enjoying this meeting very much. I am glad to see this wonderful turnout which is a sure sign of fellowship. Regarding the photographs which have just been taken, I am pleased to tell you that they will be sent after they are printed. Again, let me thank Captain Knoll and his officers on behalf of the M.I.T. Club for let-

ting us have this wonderful opportunity of visiting the *St. Paul*." — T. K. KANG (FSSP), *Secretary*, Taipei Technical Institute, No. 1430 Chung Cheng Road, Taipei, Taiwan, Formosa.

Tokyo

I have the great pleasure to report that The Right Honorable C. D. Howe'07, II, Minister of Trade and Commerce for Canada, has visited Japan as a guest of our government. Minister Howe arrived at Tokyo on October 23, and stayed until November 7. Our Alumni Association of Japan intended to hold a special meeting in his honor, but all the program was set by our government, and the timing was very close with an inspection tour and public meetings. The Canada-Japan Society was kind enough to have our Alumni Association join in the welcome dinner party of its Society in the honor of Minister Howe on October 26.

It was quite an event for our members to have had the privilege of extending our welcome to Minister Howe at the beginning of the party. Every member introduced himself in turn. We were pleased to hear the remarks in his address that he would report of his pleasant meeting with the Alumni group in Japan at the Institute Corporation's meeting on the next occasion.

We were really inspired, meeting the Minister Howe, and recalled the picture of his introduction as a great man of science in the M.I.T. movie which the Alumni Association of M.I.T. kindly sent to us three years ago. I have no doubt that the Minister's latest good-will mission to Japan has left us a great impression and has strengthened our friendly good neighborly relations between Canada and Japan. — YOSHINORI CHATANI'22, *President*, 2862, 5-chome, Setagaya, Setagaya-ku, Tokyo, Japan.

Venezuela

1956 Activities: This news isn't exactly up-to-date, but we hope you will enjoy it anyway. We had the best of intentions, of course — planned to write it up while hot and all that — but our South American "mañana" is so well known, we're sure we need say no more!

Our story starts on April 10, when we got together for a dinner in the American Club not only to enjoy each other's society (and that of those Harvard alumni here in Caracas who wished to join us), but also to elect new officers and see what plans could be made to bring new life to our Club. The following officers were chosen: Manuel Pérez Marciano'51, President; Gerald A. O'Connor'29, Vice-President; Jack Corrie'50, Treasurer; and Mauricio Casanova'50, Secretary. All were fired with enthusiasm, and in the ensuing weeks decided to hold a dance in the Colegio de Ingenieros on July 21, which was duly held and proclaimed a resounding success. Those attending were: Mr. and Mrs. Felipe Echaniz, Herman Scholtz, Mr. and Mrs. Donald Eckhardt, Paul Kinzbruner, Hugo Viana, Enrique Araujo Q., Clemente Pereda Berrios, Mr. and Mrs. Gabriel Disario, Mr. and Mrs. José

Aguila, Nelo Sekler, Mr. and Mrs. Arthur B. Morrill, Mr. and Mrs. Robert B. Leonard, Mr. and Mrs. Ricardo López, E. Ruiz de Luzuriaga, Mr. and Mrs. Enrique de Majo, Mr. and Mrs. Nestor Pérez, Mr. and Mrs. Thomas B. Akin, Mr. and Mrs. Charles W. Adams, Mr. and Mrs. Roy D. Rivers, Miss Carolina Disario, David Berger, Mr. and Mrs. J. A. Sánchez Mora, Carlos Enrique Nones, Carlos Bendahán, Roberto Pardo, Federico González, José Pasos Díaz h., Isaac Foinquinos, Mr. and Mrs. Jack Corrie, Manuel Pérez Marciano, and Mr. and Mrs. Mauricio Casanova.

Five months after this party it was decided to hold another during the Christmas season, so on the 21st of December, a Chinese dinner was held, featuring food by an ex-Ruby Foo chef. Unfortunately, only 22 Alumni could attend, but they had a great time just the same. Hope to improve the *esprit de corps* by next year. *Hasta pronto*. — MAURICIO CASANOVA BAZAN'50, *Secretary*, Apartado 5326 Este, Caracas, Venezuela.

CLASS NOTES

1890

Our secretary, George A. Packard, with his wife, who drove the car, went to Winter Park, Fla., for the winter since they had found that winter weather in New England was too strenuous for them, as I reported last month; but they changed their address, as of January 1, from 555 Huntington Avenue to 541A Osceola Avenue. George is side-stepping all Class activities until their return to Wakefield, so all matters of Class business should be reported to me.

I wonder how many of the Class ever knew that one of our women architects, Sophia G. Hayden (later Mrs. Bennett), was chosen only two years after our graduation to make the plans for the Women's Building at the World's Columbian Exposition (commonly known as the Chicago World's Fair). I had not known it until after her death a few years ago, when I learned that she had taken the medal which she had received for it to our classmate, Charlotte Bragg, with a request that it be delivered to M.I.T. for display. George took it to M.I.T. where it still is. After considerable investigation, and with much assistance from the Women's Association of M.I.T. — especially Mrs. Hazen and Miss Lyons — arrangements were made with Miss Caroline Shillaber, librarian of the Arthur Rotch Architectural Library, to have a suitable frame made for the medal, and to hang it in that library. It should be there before the next issue of *The Review*. — CHARLES W. SHERMAN, *Assistant Secretary*, 16 Myrtle Street, Belmont 78, Mass.

1891

"Dear William Channing Brown: I owe you and my fellow classmates apologies for ignoring many past communications, but by the time you have finished this

letter, I think you will understand and forgive.

"My father was a wholesale dry goods man, and I had five older brothers, all of whom were in business. My family, especially my sisters, of whom there were four, felt there ought to be one professional man in the family, and as I was interested and not too bad in mathematics, drawing, physics, and chemistry, I decided to go to Tech, not knowing just which course I would choose. In those years (I do not know what the situation is now), the freshman year was just the same no matter which course you finally took. I had a cousin, Saul H. Stix, who went to Tech the same year, and we became roommates. As he decided to take up architecture, I finally decided to make the architectural course my choice.

"My classmates were mostly all men who had, in one way or another, connections which would be helpful to them if and when they graduated, and by the end of my junior year, although my record was reasonably good, I began to realize that unless I was a genius, my chances of making good as an architect were not too encouraging. During the last month of my junior year, I had an attack of typhoid fever, and it was impossible to lose a month at Tech without taking the same year over again. This gave me a good excuse to drop out.

"After looking around for a number of months, a brother-in-law of mine, a lawyer, recommended me to a client of his, Seeman Brothers, Wholesale Grocers, who had just started in business in 1886. In 1896, I was offered a partnership. At the end of 1920, they became a corporation, and I was made a vice-president. In 1941, I became president, and at the Annual Meeting last September, I resigned as president, but was made chairman of the board.

"Although I have had no auto accident, like you, I am somewhat handicapped, somewhat like an old automobile that needs continual repair. I lived in New York City until 1920, but since then have made my home in the Worthington section of the town of Greenburgh, on the Saw Mill River Road, not so very far from where you are located. I have a wife and four children, three married and one single daughter, seven grandchildren, and one great grandchild. The single daughter lives at home with us.

"You can readily understand from the above that my path in life has not kept me in touch with my classmates. Trusting that you make a good and early recovery, and thanking you for your personal note which has elicited this reply. Yours very sincerely, Sylvan L. Stix."

And in excerpts from two later letters, Sylvan wrote: "Incidentally, I want you to know that your efforts have borne a little fruit. Since your contact with me, I have found it advisable to add a codicil to my will, and took advantage of that opportunity to include M.I.T. for a modest amount.

"I just feel a little uncomfortable about publishing that letter of mine. There was something so warm and personal about your original letter that it encouraged me to answer in kind, but it reads too much

like an obituary for a man who is still active. I am just wondering, in view of the fact that I doubt whether any of my classmates remember me, what possible value it could be to M.I.T. Alumni either of '91 or any other year."

"Dear Sylvan: You are a modest man and unassuming, and I love you for it; but Conscious Man, the only thinking portion of the animal creatures on this planet, is, at this period of its development, taking a major step in its onward and upward course, and Massachusetts Institute of Technology, with all the thousands of men and women, past, present, future, is one of those potent influences which makes this advance possible. You see it is an historic process, of which we are a very minor part, indeed, *but a part*. Do you not think it worthy of us to look about and see what is happening, and even rejoice a bit that we had, and have, a small but honorable part in it?" — WILLIAM CHANNING BROWN, *Secretary*, 15 Forest Street, Hastings-on-Hudson, N. Y.

1895

It will not be many more years before the recordings of living mates will be a thing of the past. Two more mates have left us. Our Class had three Cooke boys enrolled, namely Charles Prentice, John Williamson, and John Winfield Cooke. The first two have passed on, and we regret now to record the death of the last Cooke. We learned through the M.I.T. Alumni Register that John Winfield Cooke died May 9, 1956. Strange as it may seem, all these lads were born in the State of New Hampshire, one finally residing in New York State, while the other two settled in Los Angeles, Calif. John Winfield Cooke, Course VI, following graduation, was with the Lawrence Gas Company, Lawrence, Mass., for three years. Then followed three years with the Colorado Electric Power Company at Canon City, Colo., a year with the General Electric Company, Schenectady, N. Y., and then he landed in California with the Edison Electric Company of Los Angeles. Finally he was an electrical engineer with the City Engineer's Office in Los Angeles, where he remained for many years.

Professor William Thomas Hall passed on January 4, 1957, at his home on Snipatuit Road, Rochester, Mass. Hall was Course V, and after graduation he and John Durance left for Germany for post-graduate work at the University of Göttingen where they obtained their Ph.D. degrees. February, 1898, found Hall as clerk at the Adams House, Boston. September, 1898, he was private assistant to Professor Noyes at M.I.T., and then became an assistant in chemistry. In 1900 he was an instructor in chemistry, then was named an assistant professor, and finally was a professor of analytical chemistry at Tech until his retirement. He was author and co-worker of many scientific chemical subjects in association with a number of Technology students. He was a member of the Faculty Club of Technology, Sigma Alpha Epsilon fraternity, and the Highland Club. He regretfully accepted

his retirement, believing he had ample mental and physical capacity to continue as professor at Tech. Later he taught chemistry in local schools and tutored a number of students privately. We quote him as stating: "The saddest thing about the Tech career is the fact that one meets so many fine fellows there, and sees them so seldom afterward." — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

1896

Elbridge Jacobs' address is still 146 William Street, Burlington, Vt. He sends Holiday Greetings, and was sorry to miss the 60th Reunion, and we hope to see him next June. Miss Hattie Gates' address for the winter is Daytona Beach, Fla., as usual for the past ten years since her retirement as a teacher of biology in Boston High School. She is at the Williams Hotel. Jack Eynon's card from Stove Pipe Wells Hotel Cottages recalls playing golf at the 50th Reunion with Henry Hedge. Should he come east today to play with Henry at the Country Club, he'd have a foot of snow and minus 12 degrees. Jack was with the John C. Paige Insurance Company before retiring and going to 2434 Dulzura Avenue, San Diego 4, Calif.

Joseph J. Snyder, Vice-president and Treasurer of M.I.T., writes the Class: "The Paul W. Litchfield Endowment Fund for Undergraduate Scholarships was established in honor of Mr. Litchfield through the use of funds raised during the Development Program. Subsequently Mr. Litchfield made gifts bringing the principal of the fund to over \$120,000. Tuition scholarships are provided from the fund through Dean Pitre, the Director of Student Aid at the Institute. We are all delighted to have this fund at the Institute in recognition of the high regard in which we all hold Mr. Litchfield."

Mrs. Anna A. Grover and daughter gratefully acknowledge the kind expression of sympathy from the Class on the death of Nathan Grover. — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline 46, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline 46, Mass.

1897

Another answer to our circular letter of November 26 has been received from a cultured and artistic member of our Class. Professor Alfred Mansfield Brooks writes under date of December 3 from The Brick House, Middle Street, Gloucester, Mass.: "It would be boastful and untruthful, neither of which become an octogenarian, to claim remembrance of our luncheon five years ago. Particularly so as I was not present. By nature I have never been either a reunitioner or a joiner. I am nonetheless all for those who are, so I'll leave it to them to decide whether to sit in the sun in Boston, or the suburbs, come the second Monday in June, next. My congratulations on their spirit; and the hope they will have all the spirits they want. This answers your specific questions I believe.

"As to the honors, decorations, potentes, and great-grandchildren you politely suggest — my complete lack compels complete silence. Journeys are another matter. A few weeks ago I flew to Chicago and paid several reverent visits to the Louis Sullivan centenary show and, as always in Chicago, spent some hours of ever-growing admiration over Sullivan's drawings in the Burnham Library of the Art Institute — the most alive establishment of its kind in the country. And, as always, to turn the leaves of the manuscript of *The Autobiography of an Idea* in which case I admit a touch of sentimentality is mingled with my reverence. When, I wonder, will the great and unique value of this extraordinary book on education at all levels, not to mention its humane enthusiasms for culture in all forms — Alfred North Whitehead's definition of it is 'activity of thought and receptiveness to beauty and humane feeling' — when will this book get its due recognition? Incidentally, I am glad to be able to say that my fellow townsman, Peter Smith, has republished *The Autobiography of an Idea* quite recently; an honor to Gloucester. And that Sullivan spent a year at M.I.T.; a great honor to Tech.

"Of myself, since you ask, only this much more — I garden until a spade will no longer go into the frozen earth then wait, impatiently, with interludes of food and drink, books and sleep, until the earth unfreezes again and I can plant once more and hope to reap again."

The following regarding our late classmate, Luzerne Cowles, appeared in the *Hartford Courant* of December 4, 1956: "Luzerne S. Cowles, 80, of Newton Center, Mass., died at his home Monday after a long illness. Born in Hartford, July 6, 1876, he was son of the late Walter Addison and Sarah E. Norton Cowles. He was a graduate of M.I.T., Class of 1897, where he was a member of Sigma Alpha Epsilon Fraternity. Cowles also attended the University of Geneva, Switzerland, in 1898-1899. He served four years in the First Corps of Cadets, Massachusetts Volunteer Militia. A prime mover in establishing the Engineers Club of Boston, he was its first secretary and was made an honorary member. Cowles was a structural engineer with the Boston Bridge Works, was in the design department of the Boston Elevated Railway, and was later with the Stone and Webster Company of Boston as a structural and appraisal engineer, retiring in 1939. He was a member of the Boston Society of Civil Engineers, the American Society of Civil Engineers, the Harvard Church Brotherhood, and the Brae Burn Country Club in Newton. He lived in Newton 20 years, after living in Brookline, Mass. He leaves his wife, Amy Olmsted Cowles; two sons, Addison Cowles of South Lincoln, Mass., and Charles H. Cowles of Needham, Mass.; a daughter, Miss Katharine Cowles of Newton Center; and five grandchildren. Funeral services were held Wednesday, December 5, at Newton Cemetery Chapel. Burial was in Center Cemetery, East Hartford, Conn."

December 21, 1956 was the date upon which the youngest regular member of

our Class (Irénee du Pont, according to our records) reached the age of 80 years. We then truly became a group of octogenarians with no exceptions.

According to the December issue of *Better Living*, published by the Du Pont Company, Irénée, Honorary Chairman of the Board, and Mrs. duPont, on the above date were surrounded by nearly all of their eight children, 35 grandchildren, and five great-grandchildren. A unique group photograph taken in 1947 showed 40 of his family gathered together at one time. Numerous other photographs of our classmate from the age of three upwards were shown in the article. Irénée was connected with the company for over 50 years, and its president from 1919-1926, an important formative period when organization reforms were introduced and other programs of expansion developed. Subsequently, for 15 years, he served on the Finance Committee, and is now referred to as "Senior Counselor and titular head of the DuPont family."

As part of the descriptive article, the following is included: "Mr. duPont advised a young man starting a career to 'follow whatever branch he really feels he likes, and, in doing so, be careful of his reputation for integrity and honesty. Determination and character, to me, are more important in getting ahead than education, native skill, personality or charm.'

"Asked which experience with DuPont employees had produced the most lasting satisfaction, he replied: 'Progress made in avoiding accidents. The loss of my father in a company explosion when I was eight gave me a very personal appreciation of human suffering from industrial mishaps. Our company safety efforts have been almost unbelievably successful, although there is always a likelihood of future improvement.'

What Irénée himself has to say about his 80th birthday party is contained in the following letter of January 2: "I have delayed answering your letter, not knowing what things might be available by the end of the year. I don't think anything important has happened, except perhaps an honorary degree conferred on me by the University of Delaware, and successfully surviving the party given to me on my birthday, December 21, where some two or three hundred people attended the best party I ever went to. I can report that besides shaking hands with a large number of people, I had an opportunity to renew the pleasures of dancing. I certainly was going for upwards of two hours that night and the morning of the 22nd. Had a grand time as all the girls, thinking me harmless, gave me quite a rush."

William C. Potter was another of our distinguished industrialists, mining engineer, and our most prominent banker. As an undergraduate he took but limited interest in Class affairs — and certainly little afterwards, except financially. He was a staunch and liberal supporter of M.I.T. and a life member of the Corporation. The following is from the *New York Times* of January 2: "Albany, Ga.: William Chapman Potter, former president and board chairman of the Guaranty

Trust Company of New York, died today at his plantation home near here after a long illness. He was 82 years old. Mr. Potter was from the Nineteen Twenties to the Forties one of the world's most powerful bankers and industrialists. He started as a mining engineer in the West, extended his activities to Mexico, and soon was engaged also in the financing of many projects.

"He was among financial and industrial men who conferred with Presidents Herbert Hoover and Franklin D. Roosevelt concerning the restoration of confidence in the country during the Depression and the changes in laws affecting banks and the stock market when the New Deal was in power.

"He was born in Chicago, and graduated from M.I.T. in 1897 with a S.B. degree in mining engineering. After that he prospected on his own in the Rocky Mountains. Later he was employed as a mining engineer in Colorado and Montana. Mr. Potter became, in 1901, an engineer for the Atchison, Topeka and Santa Fe Railroad. Next he was a partner in the Chicago mining engineering firm of Dickman, Mackenzie and Potter. In 1904 he went to Mexico as manager there of the Guggenheim Exploration Company, a mining concern. Later he was general manager in Mexico and in the Southwest of the American Smelting and Refining Company. Mr. Potter became president of the Intercontinental Rubber Company in 1911. The next year he joined the Guaranty Trust as a vice-president. In 1916 he resigned to become a member of Guggenheim Brothers, with which he remained for several years, continuing, meanwhile, as a Guaranty Trust director and a member of the bank's executive committee.

"In 1918, Mr. Potter served in Washington as chief of the Equipment Division of the Army Signal Corps. He won the Distinguished Service Medal. He became chairman of the board of directors of Guaranty Trust in 1921 and later that year relinquished the chairmanship to become president. He held that post until 1934 and then again became chairman, remaining until 1941. He was chairman of the bank's executive committee from 1941 to 1946 and continued as a director until last January, when he became director emeritus. Mr. Potter was a Class A director of the Federal Reserve Bank of New York from 1937 to 1940 and president of the New York Clearing House Association in 1944-1945.

"He was a former director of the Anacosta Company, Bethlehem Steel Corporation, Atchison, Topeka and Santa Fe Railroad, Electric Bond and Share Company, Columbia Gas and Electric Corporation, Interborough Rapid Transit Company, and other concerns. He was a former board chairman of the Kennecott Copper Corporation and a former vice-president of the Braden Copper Company. Mr. Potter was a life member of the Corporation of M.I.T., and had served as treasurer and a trustee of the Juilliard Musical Foundation. Mr. Potter is survived by two daughters, Mrs. Jean P. Allen of Southampton, L.I., and Mrs. Charlotte P. Jennings of New York, and

a granddaughter." — JOHN P. ILSLEY, *Secretary Pro-tem*, 26 Columbine Road, Milton 87, Mass.

1898

"The '98 Cup is on my desk; and the Class of '98 is in my heart." So wrote Charlie Winslow about 45 years ago, at the beginning of his illustrious career. Many facets of this career have appeared in the '98 Class Notes. The summary, as printed in the *New York Times*, is impressive:

"New Haven, January 8. Dr. Charles-Edward Amory Winslow, Professor Emeritus of Public Health at Yale University, died Tuesday at the Woodruff Center here. His age was 79. Dr. Winslow founded the Yale Department of Public Health in 1915 and served as department chairman until his retirement. He had influenced international health policies and advances, through the World Health Organization and, earlier, through the health section of the League of Nations. He was a member of the American Red Cross mission to Russia in 1917 and general medical director of the League of Red Cross Societies in Geneva, Switzerland, in 1921. Dr. Winslow was instrumental in the founding of the Yale School of Nursing in 1923 and had been editor of the *American Journal of Public Health* since 1944. He had been chairman of the New Haven Housing Authority since its inception in 1939 and had advanced bold plans for the redevelopment of slum areas. The authority subsequently constructed 2,500 apartments for low and moderate income families.

"Won '56 Lasker Award. In 1952, Dr. Winslow received the Leon Bernard Foundation prize at Geneva for outstanding contributions in international public health and, also in 1956, won the Albert and Mary Lasker Award of the American Public Health Association. Dr. Winslow was born in Boston on February 4, 1877, the son of Erving and Catherine Reynolds Winslow. His mother was a famous actress. He received a B.S. degree from M.I.T. in 1898 and an M.S. from M.I.T. in 1899. He received an honorary degree of Doctor of Public Health from New York University in 1918. He was on the M.I.T. faculty from 1902 to 1910 and at City College in New York from 1910 to 1914 before going to Yale, where he held the rank of Anna M. R. Lauder Professor of Public Health.

"Soon after joining the Yale faculty, Dr. Winslow directed a public health survey of New Haven. It formed a pattern of community surveys that the Yale department has made in dozens of cities in the last 35 years. Dr. Winslow did extensive research work in biology and studies in the relationship of temperatures to human life. He made fundamental contributions to the physiology of air conditioning. Until his illness, he was writing on environmental sanitation."

We are reminded of the words from *Pilgrim's Progress*: "Thus, Valiant-for-Truth passed to the other side; and all the trumpets sounded." — EDWARD S. CHAPIN, *Secretary*, The Eliot, 370 Commonwealth Avenue, Boston 15, Mass.

1899

George C. Glover, IV, is still active in his profession at his home on 40 Apthorp Road, Melrose, Mass. George and I used to commute from that city to Boston during the years from 1895 to 1899. Walking together up Beacon Hill, over the Common to Boylston Street and M.I.T., we became fast friends. He is now busy on several architectural projects, some new, some alterations, in three states. George spends summers in New Hampshire not far from where I go, and spends most of the cold weather in the Southland. So, like the rest of us, although he keeps comparatively busy, he has learned (I hope) to take life at a lessened speed. He is an active member of the Boston Philatelic Society and several other professional organizations.

The Alumni Association office recently reported that Charles A. Schmitt, V, who has lived in Reading, Mass., most of his life, had moved to 594 Fort Hill Road, Scarsdale, N. Y. I phoned him from Pleasantville, representing myself as a member of the Reading Police Department, and asked him when and why he had left Reading, and a number of other equally impertinent questions. When I had got the material for this story, I told who was calling. He admitted later that for a while I "had him on the ropes." (Guilty conscience?)

Charles, now retired, is living with his son. He was with the Carter Ink Company of Cambridge, Mass., for 53 years, being chief chemist for that company for 35 years. He still holds the office of consultant for them. He is an honorary member of the American Society of Questioned Documents Examiners and holds the office of vice-president of the Boston Industrial Home for Homeless Men. This organization gives shelter, food, and clothing to over 500 homeless men. By supplying their physical needs, faith and courage is restored. One of Charles's special projects is the contribution of carbon paper to charitable and religious organizations, and to boys and girls clubs. Thus Charles keeps active and young in heart.

Ninety-nine scores three times on the honor roll which records three names of the 50 oldest graduates of M.I.T. as of October 1, 1956. They are: Albert S. Perkins, born July 7, 1861, seventh oldest; Henrietta T. Graves, born September 7, 1862, eighth on the list; Eleanor F. Frothingham, born 1865, 37th on the list. — BURT R. RICKARDS, *Secretary*, 173 Edgewood Avenue, Pleasantville, N. Y. MILES S. RICHMOND, *Assistant Secretary*, Little Compton, R. I.

1900

We have received delayed notices of two losses which our Class has sustained. Charles E. Sherman, IV, died May 19, 1955. He lived in Westerly, R. I., where he had his own business — R. A. Sherman's Sons Company. Francis B. Dutton, X, died October 27, 1956. We have had no direct word from either of them for many years. Your secretary expects to be in Florida for some weeks in January and February. He hopes to pick up some

word of the several members of the Class who are there, either permanently or for the winter. If he can, you will hear about it. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

1901

As this is written in January before the Class Letter comes out, I have two or three replies to the last Class Letter which will, I think, prove to be of interest, although they are a year old. Mrs. Pauline McDowell Atkins, Sp. VIII, is not on the Class list. She writes: "For many years I've carried an inspiring, steadying memory of work in the physics laboratory to the right as one entered the old building on Boylston Street."

Donald Kohr, V, of Lowe Brothers Company, Dayton, Ohio, says: "On the first of October, 1954, I decided that my age made it advisable for me to step down from my position as president and to turn the office over to our executive vice-president. Since that time, however, I have continued as chairman of the board, and have been putting in about as much time as I formerly did. Inasmuch as I am now in my 80th year, I am considering the question of retiring completely from the business, but it will probably be some time before I do so."

W. Fred Davidson, II, who is in California, reports: "Although retired from business, I still seem to find something to do most of the time. Still enjoy singing in church choir and Scottish Rite Chorus. My wife and I enjoy traveling by auto. Our last trip, a couple of months ago, was to follow the coast north through San Francisco and Eureka, Calif., to Astoria, Ore. Then east along the Columbia River through Portland to Hood River, Ore. Then south to Mt. Hood, to Bend and Klamath Falls, Ore., through Redding and Sacramento home; about 1,825 miles. In the fall of '54, we went across to northern Maine, down to South Carolina, then west again." I hope next month to have some of this year's replies to give you. — THEODORE H. TAFT, *Secretary*, Box 124, Jaffrey, N. H. WILLARD W. DOW, *Assistant Secretary*, 78 Elm Street, Cohasset, Mass.

1902

I have not hesitated to ask others for autobiographical sketches and, having exhausted those furnished, I give my own. As I took the biological course at the Institute, my acquaintance with the rest of the Class was somewhat limited at the time of graduation. I recall, however, that many of the architects of several classes came down to make my acquaintance when, during my thesis work, I attempted to ash eggs in one of the primitive hoods in the old Henry Pierce in Trinity Place. They followed the scent and caught me red-handed.

My first job was with H. P. Hood and Sons, milk dealers in Charlestown, testing milk and cream. My boss was Simeon Keith '93, who was quite a genius in his way with butter starters and modified milks for babies. I enjoyed this work very much, although the pay was quite a con-

trast to present day rates — \$11.54 per week or \$50 per month. It is to be remembered, however, that Mrs. Prouty's dining room on Columbus Avenue served 21 meals for \$3.50. They were good but not elaborate. Chemistry had not perfected D.D.T., and Archie, the cockroach, and his kindred were occasional guests in the dining room.

After three months with Hood I changed to become head of the Biological Laboratory of the Metropolitan Water Works in Boston. I spent two years there, and in July 1905 became chemist at the Little Falls, N. J., filter plant of the Passaic Water Company. My stay here was brief as I joined the Lederle Laboratories in New York in the fall. These laboratories were commercial laboratories doing diversified chemical and bacteriological work for private individuals or industries, and furnishing consulting services. I spent two very interesting years with this firm as it was at the period when Dr. Wiley was crusading for pure food laws; commercial pasteurization of milk was in its infancy; the use of ozone in the purification of public water supplies was being advocated, etc. These and many other activities which were touched upon in the laboratories made for interesting work and kept one in touch with the times, but I never grew fond of New York, and when in 1907 I was offered a job with the Peoples Water Company in Oakland, Calif., I accepted gladly.

The earthquake of 1906 had pushed the population of San Francisco over across the Bay in large numbers, and the local water company was hard put to supply the increased population. Charles Gilman Hyde '96, Head of the Civil Engineering Department of the University of California, was heading up an organization to design proper filters to purify the known supplies and guard the safety of the water then in use. W. W. DeBerard and Langdon Pearse, both of '01, were the engineers in charge of the experimental filters, while F. M. Eaton '05 handled the chemical laboratory and I the bacteriological. The experimental filter tests came to a close in about two years as did the chemical laboratory, but my work continued another two years before the entire project was abandoned.

Eaton and I purchased the equipment of the two laboratories and moved it over to San Francisco where for three years we carried on a successful commercial laboratory under the name of Eaton-Philbrick Laboratories. Our main lines of work were chemical analyses of cement with physical tests of the same, soils, drinking and irrigation waters, and bacteriological examination of waters of town supplies. I understand that ours was the first bacteriological laboratory on the Coast. I had found life in California rich and satisfying, and had expected to remain there, but when "propositioned" to buy or sell I sold and returned East in late 1913 and became associated with the Boston Biochemical Laboratory in Copley Square, Boston.

This laboratory had been founded by Professor Samuel Prescott primarily as a dairy laboratory, but had expanded to cover a very broad field dealing with all

kinds of problems involving foodstuffs and general sanitation. We also engaged in the evaluation of commercial disinfectants — a field in which I remained active until retired. For six years while here I was chemist for the State Dairy Bureau and saw much court work in connection with prosecutions for the sale of oleo as butter.

In 1920, Hervey J. Skinner '99, Bert Sherman '02, and Dr. Esselen, Harvard '15, united as Skinner, Sherman and Esselen, Inc., to conduct the business of a general commercial industrial laboratory. They purchased the Boston Biochemical Laboratory, acquiring the good will and laboratory equipment of a going concern. Prescott and I became directors in the new organization and I continued working for the new set-up. In 1931 Esselen withdrew, and the firm became Skinner and Sherman, Inc., and I became vice-president as well as director.

Skinner and Sherman succeeded in building up an organization which successfully served clients in various lines throughout the country. I handled the work involving food testing and processing, water and sewage analyses, both those chemical and bacteriological in nature. In the bacteriological department, we served a large and widespread clientele among manufacturers and users of disinfectants and antiseptics, evaluating their products by accepted procedures which through the years we had done much to develop. It is this portion of my work which has given me the most satisfaction. In 1949 Skinner and Sherman was sold to a new group with the members retained to carry on their previous activities. I remained through 1953; Sherman and Skinner had retired earlier.

As I have always believed that mingling with others having the same interests is mutually beneficial, I find myself a member of several professional societies, namely: American Chemical Society (Emeritus), American Public Health Association, and the American Society of Civil Engineers (Life Member, Affiliate). I was a charter member of the Institute of Food Technologists, and for about 40 years a member of the Society of American Bacteriologists, but withdrew from both upon retiring.

As to vital statistics — I married Ethel Holt of Salem while still located in California, and we have made our home in Salem for the last 44 years. We have two married sons and two grandsons. One son lives in nearby Beverly, the other in Chicago.

Grant Taylor has sent me a clipping from the Newport (R. I.) *Mercury and Weekly News* telling of the death of Alfred R. C. Katzenmeier on December 22, 1956. We quote from the clipping: "He was a manual training teacher for more than 50 years. For most of that time he taught in the Townsend Industrial School on Broadway. Later the classes were moved to Mumford School, where he served as acting principal for Mumford-Callender Schools. He retired from teaching several years ago. Interested in Boy Scout work at its outset here, he became one of the first scout masters in 1910, and continued in area leadership for 30 years. He retired as a scout master in

1940 but continued on the area advisory committee. He received the Captain George Bucklin merit medal from the Narragansett Boy Scout Council in 1949. He was also active for many years in the work of the Community Center. A member of the city's Recreation Commission for about 30 years, he was its chairman during a large part of the time. He also represented the Massachusetts Mutual Life Insurance Company for a number of years. He leaves his wife, Mrs. Isabelle Ronayne Katzenmeier, three daughters and two sons."

Don't forget that June and our "55th" are but three months away, and that the others are expecting to meet you at the Wentworth at that time. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

1903

In the May 1956 issue, the death of Richard Manning Field, Course I, was reported, date unknown. It appears that he had finally succumbed to a long and painful illness, February 4, 1956, at the Elm Crest Manor, Portland, Conn. He was born August 29, 1882, in Brooklyn, N. Y., and attended the Cornwall Heights Schools, the Brooklyn Latin School, and St. Paul's School in Concord, N. H. In 1903 and 1904, he was in the employ of the New York, New Haven, and Hartford Railroad Company. From 1904 to 1910, he was Washington representative for the Southern Machinery Company of New York. He was married to Eleanor Smith of Brooklyn, N. Y. They had one daughter, Phoebe (Mrs. David H. Gray), of Brooklyn, N. Y., who survives him; also two grandchildren, David Manning Gray of Philadelphia, and Susan Gray of Brooklyn, N. Y.; and a brother, Charles M. Field of Peacham, Vt.

Your secretary recently received a copy of a book in the category of religion, by Hermon F. Bell, I, a member of a prominent accounting firm. This is one more example of outstanding accomplishment in a non-technological field following M.I.T. training. W. E. Mitchell, Atlanta, Ga., finds plenty to keep him busy there as well as in Tennessee and Kentucky, in addition to the enjoyment of watching 13 grandchildren rapidly grow up. More power to you, Bill.

Some of our sun-chasers are well established in Florida now, with H. Crosby in Sarasota, G. Gleason in St. Petersburg, and Lounsbury in Fort Myers. Fred A. Olmsted is still with the Ordnance Department of the Army, and resides at 4616 MacArthur Boulevard, Oakland, Calif., but expects to retire soon and move to Corte Modera to be near his son and grandchildren. Southern California has a lure for some of our classmates; F. B. Crosby is happily situated at Redondo Beach, and G. H. Clapp is in San Pedro, and, after being a widower for several years, is taking unto himself another wife. Our felicitations and very best wishes, George. — LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass. F. A. EUSTIS, *Treasurer*, 131 State Street, Boston 9, Mass.

As often happens when the time arrives to prepare Class notes for inclusion in *The Review*, there is a great scarcity of items, and this situation is quite prevalent in January, 1957, when it is time for material for the March issue. Back in the days when "M.I.T. was Boston Tech," a man named Newton Newkirk ran a column of so-called wit in the now defunct *Boston Post*, and when he was short of material, he ran a lot of disconnected items, headed "Personals and Locals Mixed," and that is what I am calling my production for March 1957.

First, I have conversed by phone with Gus Munster, and find him to be just about as when I last reported on his condition. He is able to get about pretty well and goes into Boston on many occasions, but he does not care for the winter weather. Also, I have talked with David Sutton, and find that on account of the wintry, snowy weather with its slippery walking conditions, he has given up attempts to go into Boston to his office for the present because he has a fear of slipping and falling — a feeling which I and others share with him. Perhaps by the time in March when you read these notes the winter weather may have changed to a more springlike and pleasing set of conditions, and some of us may find it more enjoyable.

I have talked with Gene Russell, our jovial Class treasurer, and find him to be well as almost always. He told me he had had a letter from Frank Davis of Detroit saying that about Christmas time Frank had returned from a visit of three weeks to a hospital for an operation, but at the time of writing, Frank was at home and recuperating rapidly, of which we are very glad to hear. We hope that his stay in the hospital was not too unpleasant and that the nurses were handsome and pleasant, which is always a help in such cases.

For this month at least there has not come the news of any deaths among our classmates, which is certainly a relief. Gene said recently that he met Cy Ferris on the street in Boston, and that Cy was looking well and apparently was feeling fine.

I have received a couple of letters from a few classmates not long since and, as the letters give some interesting information, I give them to you here for your edification. The first comes from Reggie Wentworth, and is quite informative as to his experiences. He writes from Frederick, Md., where he has been residing for some time. In the list of things given in the *Senior Portfolio*, which were among his notable efforts while an undergraduate, we find the words "Lieutenant in the Cadet Corps," which is a laudable post. However, I remember him playing in the Freshman Band, so nobly conducted by Ned Broad. Reg played the baritone horn or the slide trombone as required by conditions. He was good on either.

"Dear Hank: How long since I wrote you? Year plus. Note! A bridge can be icy, the road not. A short bridge over a railroad. My wife and I skidded on bridge,

on the road, rolled over on the grass, both thrown out, hospitalized 18 days, now recovering. The car, junk. First accident, though I've had two accident insurance policies for years, plus car accident insurance. Probably dollars plus.

"Retired for two years. Came to Frederick four years ago to do a job for a contractor at Fort Detrick nearby (Biological Research Center of Army Chemical Corps). The job was finished, and I expected to get another, somewhere. No one wanted a man of 72, hence retirement. Thought I'd work till 110.

"We've lived in plenty of places, but we prefer Frederick. (1) Our home: part of a very big house, built 140 years ago. The main room is 35 feet by 20 feet, and upstairs are two large bedrooms and bathroom. (2) Location: in Court House Square; County Court House, 1864, across the street, and lawn, shade trees; Public Library; around the Square, big (and I mean big) mansions built 100 years ago or earlier; second door from us is a big handsome Episcopal (we're members) church built 1855; one block to main shopping street. (3) Attitude: most of the men one meets, speak, and if one wants to chatter, they are ready to chatter. A very wealthy community for at least 200 years. Why? Rich land, now used for cattle, mills, corn, wheat.

"Remarried in 1935; best thing I ever did — love Myrtle today more than when we were married. First wife died, had three children: John, 45, has his own business in Albuquerque, N. M., and just finished being president of Chamber of Commerce; Palmer, 43, is management consultant on human relations in Los Angeles, Calif.; Marianne, 41, unmarried, has had long jobs, well-paid, with difficult personalities, in New York City.

"An early job brought me in contact with Henry L. Gantt, one of the progenitors of scientific management, from whom I learned all I could absorb, worked for his clients, learned executive tricks, used them up to \$30,000, became management consultant, did all right, worked nearly full time, till retirement. Best of greetings to you. Reg."

We certainly hope that he and Mrs. Wentworth received no injury of any lasting nature from the automobile accident mentioned in his letter, and we are glad indeed to hear of his success in life.

The second letter mentioned comes from Dr. Elmer A. "Shorty" Holbrook, and is most interesting. You all know about the automobile accident of two years ago which he mentions, and it is with much regret that we learn that Mrs. Holbrook still suffers to some extent from its effects, and we all hope indeed that she may improve more rapidly from now on.

Shorty mentions the passing of another Boston landmark in the wrecking of the old Hotel Brunswick which contained the so-called "Tech Chapel," a combination barroom and restaurant, so named, I suppose, from the gilt Gothic arch which surmounted its entrance door. The article to which he refers in the December Review is so written to create the impression that the "Chapel" was a

real chapel in which Tech religious services were held. Not being a religious-minded man in those days, I never entered the establishment, but there were those, I understand, who wrote home regularly for funds for "Chapel Dues." Now that M.I.T. has a campus and a real bona fide chapel thereon, it almost seems impossible that anyone in the past or present could have thought the old "Tech Chapel" in the basement of the Hotel Brunswick was anything but what it was. However, those who went surely enjoyed themselves while there and repeated their visits more than once. I think that Shorty's letter is so informative that you will all enjoy reading it, and so I give it here.

"Dear Henry: Thanks for remembering us with a Christmas card and personal note. We do not send Christmas cards, but at this time of the year, I try to write notes to old friends I do not often see. We stayed in New Hampshire later than usual last fall as the foliage was so beautiful, and we wanted to enjoy it even if I did have to light the fire in my shirttail on several frosty mornings. Then came a rain and a heavy wind that stripped off the leaves, and we were away to the comfort of natural gas heat.

"Mrs. Holbrook is about as last year; I am afraid she will not entirely recover from the effects of her auto accident two years ago. Her left leg is greatly enlarged, and she walks a little with difficulty. Perhaps I have told you of having an elevator put in the house so she can get up and down. Just now I am in a hassle with the income tax people, who claim the elevator is not a deductible item, but one increasing the capital value of my home. Ho hum.

"We saw Ralph Ingram and Mrs. when they called last summer on their way through New Hampshire on a trip to Canada. Ralph seemed well, and I think he is enjoying retirement. He is the only man I knew at Tech who never had a nickname — why, I do not now know. A Christmas note from Paul (Peacham) Paine said that he actually has retired (he always did enjoy hard work more than I did), and is playing with the grandchildren at Corona del Mar, Calif. I know of no other Class news, but I certainly do enjoy your 1904 letters to *The Technology Review*.

"One very important (?) matter to take up with you, as follows: In the Review of December, 1956, on page 91 is an article, 'Wreck Brunswick Hotel.' The writer, paragraph three, makes the innocent statement, 'The Brunswick Hotel, where chapel was held in the earlier days of the Institute.' Is it possible, Henry, that this generation really thinks we held chapel there? If so, someone should tell them that 'Chapel' was a joke, and caused by the fact that a little Gothic-like doorway on the ground floor led to the only chapel there, a small barroom frequented by Tech students, since Rogers Hall was just across the street. Especially the Course III (Mining and Metallurgy) laboratories were in the basement of Rogers and, after a weary day, some students were in the habit of taking one litre beakers from the laboratory to the 'Chapel' and to see

who among them could drink a litre of beer the quickest. At any rate, I got a great kick out of thinking that perhaps this present generation thinks a chapel really existed there.

"Last summer I retired as a member of the State Sanitary Water Board, after 24 years of trying to clean up Pennsylvania's streams. The meetings took about three days a month, but it was becoming increasingly difficult for me to be away from home. So now I do nothing and rather enjoy it. Please remember us to Mrs. Stevens. Hope you may be able to visit us again in New Hampshire. We no longer think of doing any but necessary travel. Mrs. Holbrook joins me in the Season's Greetings to Mrs. Stevens and yourself, and again that I was delighted to hear from you."

The only death I have to mention is that of John H. Foster of 47 Auburn Street, Concord, N. H., mentioned without date last month. I now have the date, which was September 6, 1956. I have received from the Alumni Office a notice to the effect that the cards of our classmate, Irving E. Adams, had been removed from the Alumni file, and it was assumed that he was deceased. Now, however, it has been established that his address is 211 North Main Street, Jamestown, N. Y., where he is engaged in his major life activity as a glass consultant.

Fred M. Pierce, Course II, has changed his address from Hyannis, Mass., to 219 Sixth Avenue, W., St. Petersburg, Fla. Guy C. Riddell is now located at South Washington Street, Easton, Md. George B. Farnham's new address is P. O. Box 434, Jaffrey Center, N. H. Karl E. Peiler has changed his address from West Hartford, Conn., to P. O. Box 228, Mystic, Conn. It seems to me that I remember that he told me at the time of our 50th Anniversary in 1954 that he and Mrs. Peiler were building a new home. It now seems evident that their new home has been completed in Mystic, Conn., but he described to me a much more elaborate residence than Post Office Box 228.

And so with these few address changes, I bring to a close these notes for the March 1957 issue of *The Review*. The last couple of days as I write these notes, January 15 and 16, have been the coldest January days since 1882, and I hope the temperature will have risen from minus 12 degrees to a more comfortable figure when you read them. — HENRY W. STEVENS, *Secretary*, 1082 Commonwealth Avenue, Boston 15, Mass.

1905

These notes are being written while on a visit to my daughter's home in Mountaintop, N. J. I expected to make several phone contacts with classmates in the interest of Class news, but from the number of D.A. calls, assume that some of our classmates are enjoying Florida or at least warmer weather.

I did contact George Rhodes, VI, and had a very good talk. George was confined to the house for the reason that snow covered the links where he says he plays about three or four times a week. He has moved to 225 Forest Avenue

(Glen Ridge), just a few blocks away from his previous residence, and "has nine grandchildren in our block," which allows him to challenge other grandfathers, not on totals, but as to numbers in immediate proximity. My seven are thousands of miles apart. George says his health is good, and he is enjoying retirement (seven years now) very much. I talked with Mrs. Percy Hill, II, at Ridgewood, but Percy was at the Y.M.C.A., probably swimming or playing basketball. Mrs. Hill said he was in real good health, and "out about three nights a week" — active in Y.M.C.A., Masonic work, American Legion, and church work. Harry Charlesworth was sick in bed, an entirely new experience for him, awaiting doctor's diagnosis. Hope to get the results before I leave. Tried to reach Whitmore, II, Meriam, II, at Nutley, Win Taylor, II, Shaw, VI, and Field, VI, but was unable to do so. Results less than 40 per cent, but worth it.

Your secretary acknowledges receipt of Christmas cards from the Stevensons, Hadleys, Chestermans, Fishers, Prescotts, Lovejoys, Babcocks, the Roy Allens, the Files, Drakes, Balls, Ayers, Bartletts, the George Fullers, Walkers, Shapiras, Spaldings, Klahrs, Bob McLean, Wallace Taylor, Walter Eichler, and Sid Caine; also from Mrs. Ros (Helena) Davis, Mrs. Oscar Merrill, and Mrs. Frank Webster. Through these we get a modicum of news. Gladys Webster reports that Frank is confined to his bed most of the time; Helena has just about finished her "hillside cabin" at Sandwich, N. H.; Fred Poole is living alone in a "guest house" on the property of his son-in-law at South Windham, Maine; the Walkers have been spending part of the winter with their son at Charlotte, N. C.; the Fullers are at Leisure City, Fla.; the Bartletts report having had a pleasant reunion with the Bobby Burnses enroute to Florida for the winter.

Two of the cards were self-produced or "inspired." The one from the Marcys, an etching by Grove, was a hillside scene on their farm at Franklin, N. H. The one from the Ayers showed the dining room at "Bellaire," the summer home and farm at Strong, Maine. The Simpson card announced the sending of a basket of grapefruit, which duly arrived (famous Texas pinks) and were much enjoyed, especially the beautiful Mexican basket, which Ruth has added to her collection.

Claude Anderson's card was large enough for him to write quite a letter, giving us direct information as to his health. He seems quite optimistic in spite of two abdominal operations in November, 1955, a heart attack in May, 1956, and a "slight stroke" last October. The Andersons celebrated their 50th anniversary on October 18. Their son, Townsend, was putting in 24 hours a day as military attaché in Cairo. Claude says to tell the fellows that in spite of all he has been through, "it has not left me paralyzed, and I have all my buttons." Prince Crowell, V, up from Woods Hole for the day, dined with us at the M.I.T. table (daily affair) at Thompson's Spa recently. He had just passed his 75th birthday, looked hale and hearty, and was just as full of

mirth and optimism as ever. Says it's the result of five years of retirement, but as we remember it, he was just that way 50 years ago. He and Mrs. Crowell were about to leave for Florida for the rest of the winter.

We have one death to record, that of George S. Radford, XIIA, of La Jolla, Calif. George, a graduate of Annapolis, came to Tech at the beginning of our junior year, had a commission with the Navy for a number of years, but we have no record of his later years. He was registered as a consulting engineer at the time of his death. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. GILBERT S. TOWER, *Assistant Secretary*, 35 N. Main Street, Cohasset, Mass.

1906

Near the middle of the February Class notes you read: "Thus endeth the Reunion chronicle." But errors and omissions in that account are beginning to come in, and is the secretary's face red!

George Davenport, Jr., I, says in a recent letter: "I attended the Class luncheon and dinner last June with my wife. When we got to the luncheon table all seats were taken, so we had to sit with the '04 class. At the evening dinner I only met one man I remembered, Terrell Bartlett, whom I had seen twice in recent years when he had visited Los Angeles. This was the first Class reunion I had been to since graduation, and my first trip to Boston since 1911." Imagine coming all the way from the West Coast after all these years, for his first reunion, and having to sit with another class, etc. Somewhere our planned hospitality during the 50th was evidently inadequate or incomplete in spite of our best efforts. George had written partly to request a copy of Tom Hinckley's research into the Class history, and kindly met the stipulated conditions by including a résumé of his business career which is included correctly up to 1916 in Jack Norton's history of the first 10 years. He had continued with the Santa Fe in the Los Angeles office, becoming assistant to the chief engineer in 1954, until his retirement in May 1956 — a total of over 45 years with that railroad. Some of you Course I and Course XI men will be interested to know that George "was engaged principally in water supply engineering for the railroad; locating wells; designing water stations (including one of the highest centrifugal pump lifts in the world at Grand Canyon); and having much to do with improving both water and fuel facilities for steam and diesel locomotives." The Davenports have two children, Grace S. and George L., both graduates of the University of California at Los Angeles, and neither married. The daughter is a school teacher. George has been a member of the A.S.C.E. since 1925 and also a member of the American Water Works Association. He concluded his letter with: "The plan for a full Class history sounds interesting."

Tom Hinckley, XI, you would be sure, is of the same mind. In a recent letter to the secretary, after a pat-on-the-back

for the Class notes in the first two issues, he went on to say that his research "may be of some historical value if, as, and when you decide to tackle such a time-consuming job as a Class history. In case you do, I enclose my own record of activities." Except for the war years when Tom retired as captain, his connections since 1911 have been mainly with Municipal Research Bureaus, New York City and Westchester County, Milwaukee, Toronto, and at M.I.T. with the Division of Industrial and Municipal Research, being acting director from 1931 to 1933. While we are on this subject of careers, do you realize how helpful it is to have a complete, detailed record in the secretary's files? You might like to know that of the approximately 500 names listed in the 1916 history, about 200 gave more or less detailed information of their connections during those first 10 years — and of those, about 140 were married. From then on, the files are fairly complete for many classmates, although not always exact.

While on the subject of history, you may remember reading in previous notes that Andy Kerr, VII, to quote from his letter to Jim, had "recently been elected general chairman of a committee of 25 to study the points of highest historic value, including our ancient Harbor of Refuge, with a view to their true-to-history restoration." Bill Cunningham, in his column in a recent Boston *Herald*, gave a detailed account of the plans for this restoration which he said would be made just south of Plymouth along the Eel River on a large tract of land which has been given for that purpose. About the time you read these notes (March 7), I expect to be attending a meeting of a church group at which the speaker will be William A. Baker '34, XIII, who is hull engineer at the Bethlehem Steel Company shipyard at Fore River. His hobby and relaxation is delving into marine archaeology, and five years ago the governors of "Plimoth Plantation, Inc." selected him as the qualified authority to study, design, and prepare plans for the construction of a new *Mayflower*. As many of you may know, this identical twin was completed and launched last year in Brixham, Devon, England — built to the same dimensions, using similar timber and shapes, same kind of iron and fittings, etc. *Mayflower II* will sail this spring for Plymouth (she won't have as many aboard!) as a gift of the British people to America, and will be permanently berthed as part of Plimoth Plantation, which includes the original Pilgrim village now being created as a permanent shrine. There is a rumor that its arrival may be timed for Memorial Day, May 30, otherwise early in June, and the above account is introduced partly as an incentive to visit New England later this spring (Alumni Day is Monday, June 10) and see not only this restoration but the Saugus Iron Works, first in America, and Sturbridge Village, the Sherburn Museum just south of Burlington, Vt. — but why go on, as "points of highest historic value" are scattered all over New England!

Some classmates who attended the 50th seized the opportunity then to get around. In a July letter from Percy Tillson, he

says: "We finished our New England trip with a series of visits to old-time friends and places, and enjoyed it a great deal. On the eve of our departure, we ran into Mr. and Mrs. Hinckley at the Straitsmouth Inn in Rockport, and so left in a real '06 atmosphere. We both appreciate the fine job you and Jim (together with your respective wives) did on the Class reunion and thank you all for it." Likewise, Leavitt Bent wrote to say how much he and his wife had enjoyed the reunion and expressed their thanks. Bill Cady had a note on his Christmas card: "I not only enjoyed the Boston and Tech doings but the rest of the trip all the way back. About a month ago I went to a local Alumni dinner (Portland, Ore.) and saw Cushman, Libbey, and Mears. I took along the postcards showing pictures of Tech, Snow Inn, and Boston, and a number of fellows at the dinner seemed quite interested in them." Bill had stopped in Connecticut and New York, spending a night with the Otto Blackwells at Plandome, and in Newark, and Columbus, Ohio, on the way home.

New England is beautiful in June, and it is in winter, too. These notes are being finished on January 14, and to date our landscape has been a fairyland *five times*, with near two feet of snow on the ground at present, and 10 below zero this morning. Some don't like the white stuff and cold, however, and take off for Florida. To date we know that the Fred Batchelders and Frank Benham are at Daytona Beach, Ralph Patch is well enough after his operation to go to Winter Park as usual, and the Abe Shermans are near Sarasota — probably Siesta Key. We also know of seven who are year-round residents: Baldwin, Bruce (Malcolm), Lourie, McGinnis, Sargent, Shingler, and Stone. Here also are a few changes of address to note in your golden anniversary Class directory (if you haven't one, write to Ned): Jerome Harrison, The Bollinger Company, 1625 Race Street, Philadelphia; Arthur Thomas, 412 Brookwood Drive, Auburn, Ala.; Paul Swartz, The Orienta, Mamaroneck, N. Y.

Besides the card from Bill Cady, the Rowses were pleased to receive year-end greetings from Betty and Stew Coey; Georgiana and Tom Hinckley, with a mouth-watering photo in color of the coast of Monhegan Island, off Boothbay Harbor, Maine; Vera Philbrick, through the years before and since loyal Phil passed on; and Pearle Brown who said in a note: "These were one of Harry's last purchases. Said he wanted them gay. Thank you for letter. I enjoyed the meet in June so much. Harry always had Tech up in front." Also the annual greeting from Fay, Spofford and Thorndike, of which Carroll Farwell is one of the long-time directors, with an airplane photo of the Prospect Hill Reservoir in Taunton, Mass., showing the gatehouse and spillway, a large double unit surrounded by dense woods. Jim and Alma appreciate the many greetings they received, too.

Perhaps you noticed an item in the '05 notes in the February Review about a talk on the obligations, as well as the privileges, of our American citizenship before the joint Thanksgiving meeting of

the Hendersonville, N. C., Kiwanis and Rotary Clubs. The account in the local paper stated that "the arrangements for the speaker's visit were made by L. G. Blodgett [1-'06], a life-long friend." Laurie has had an interesting career during these 50 years, and has certainly "been around." From the Blodgett Construction Company in the early years, he formed a shipbuilding company in Pascagoula, Miss., which functioned through and after World War I. From 1920 through the 30's he was with oil companies in Tulsa, Okla., then at intervals was in Independence, Mo., Minneapolis, Minn., Haines, Alaska, and back to Tulsa till 1953, when evidently retired, his address was Mellow Farm, R-1, Horse Shoe, N. C. — probably near Hendersonville which is about 20 miles from Jack Nortons' vineyard in Tryon. Any of you doing the Smokies might drop in on Laurie and Jack. Be sure to drop a line to the secretary when you make any such contacts with classmates. That's the kind of news you like in these notes, isn't it?

No deaths to report, but two interesting and helpful letters have been received with thanks for letters of condolence. Mary Nussbaum, Thomas F. Leary's daughter, wrote at her mother's request to complete Tom's record. He married Nellie G. Sullivan, and there is also a son, T. F., Jr., and five grandchildren. Tom had been with the Henry N. Clark Company in Boston for 45 years, being vice-president when the company was dissolved in 1950. In concluding, Mrs. Nussbaum said: "It is my greatest desire to have our sons attend M.I.T. when they are ready for their secondary education, as my father would have wished."

Mrs. Schmidt wrote at length to correct and amplify Paul's record. He married Aurelia F. Brown in 1911, and they have a daughter living in Houston, and a son, Junior, now living in Cleveland, who has one child. In the February notes it was stated that Paul had been on his own as a structural engineer from 1910 until his retirement at 70, but it seems he closed the office during the depression in 1930 and held several positions in the Federal Service (was an examiner for R. F. C.), taught engineering at Fenn College in Cleveland (founded in 1881), and his last few years were with the Cleveland Electric Illuminating Company. It's good to know that "Paul was active with the Cleveland Alumni Association and usually went — I did too, now and then." I have an idea that Mrs. Schmidt may be typical of many Tech wives, for she concluded in this wise: "I wonder if widows carry on. I should like to if they do. I haven't opened the Alumni magazine yet. I usually enjoy it. If possible I should like to see the February number."

To get some pertinent information along that line I talked with Don Severance, who is also circulation manager of *The Review*, and was reminded that anyone can subscribe at \$4.00 a year, as stated at the bottom of the "contents" page. And by the way, I learned that the subscription year is the "calendar" year and not the "volume" year, which runs from November to July, inclusive. Another possible way for interested widows to receive

The Review might be to send a modest contribution to the Alumni Fund each year to be credited to Class of '06, with The Review sent to Mrs. Incidentally, you should have received, by the time you read this, an appealing letter from Class Agent Chase. Have you sent your contribution to the Alumni Fund yet? — even just one lone buck — to up the '06 percentage. If not, why not? — EDWARD B. ROWE, *Secretary-Treasurer*, 11 Cushing Road, Wellesley Hills 82, Mass.

1907

In the February Class notes we included portions of a letter from John Frank telling of his travels in Italy and Greece. It appears that John sent a copy of that letter to Don Robbins, and Don wrote to me in January saying that by an interesting coincidence, his son, Donald, Jr., with his wife, were in the same hotel in Athens at the same time last November that John and his wife were there. Don's son is a director of Singer Manufacturing Company (sewing machines), and as vice-president in charge of European sales, he has to be abroad quite a lot. He also has charge of sales in the Middle East and in most of Africa.

Hugh Pastoriza wrote to me last December and spoke of going through some old papers. He said, "There were Dean Merrill's announcement saying that I would graduate, a card of Miss Packwood (our mechanical engineering coed), an invitation to the Cleofan reception (I'd forgotten the existence of that feminine aggregation), and the old dance programs with their alternation of waltzes and two-steps. Very nostalgic, I assure you." Hugh wrote of having been in Los Angeles during last fall and having talked on the telephone with Jim Gaylord, who is retired and lives at 1795 Windsor Road, San Marino 9, Calif. For some time last fall Sam Marx was quite seriously ill in a New York hospital, but I am happy to say that he had a fine recovery, and on last January 13 he and his wife left Chicago for Palm Springs, Calif., for a stay of three months.

The Alumni office has notified me that Herbert W. Hill, associated with our Class in the course in naval architecture, and whose home was in Southwick, Mass., died on April 22, 1955. I am also told that mail sent repeatedly to Charles W. Nutter, a graduate in mechanical engineering, whose latest address was in Portsmouth, N. H., has been returned marked "deceased." I have no knowledge whatever as to the activities of either of these men since 1907.

And now, men, I have to admit that the only additional items of information regarding classmates that I have as of January 14, when I am preparing these notes, are three changes of address, which I hope may be of interest to some of you: James P. Stow, Jr., of Course II, is at Crescent Beach, Niantic 2, Conn.; Herbert A. Stevens of Course II is at 126 West Front Street, Berwick, Pa.; Chester L. Howe of Course VI, lives on West Road, Little Compton, R. I.

My renewed reminder to you of two

vitaly important projects in the history of our Class: (1) Plan to attend our 50-Year Reunion at Oyster Harbors Club, Osterville, Mass., June 7 to 9, and if possible, the events of Commencement Day at Cambridge on June 7, and of Alumni Day on June 10. (2) If you haven't yet contributed to our 50-Year Fund to be presented to the Institute on the evening of next June 10, won't you send your check along to me very soon, please? Remember that each contribution, up to a limit of \$500, will be doubled through the generosity of our anonymous classmate. That is, your \$100 means \$200 in our Gift Fund, your \$25 means \$50, your \$500 means \$1000, your \$1000 means \$1500, and so on. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

1908

The second dinner-meeting of the 1956-1957 season was held at the M.I.T. Faculty Club, Cambridge, Mass., on Wednesday, January 9, 1957, at 6:00 P.M. Due to inclement weather, we hardly had a quorum, as many of the faithful who live in the "sticks" couldn't make it. The present winter certainly goes a long way to prove that the "old-fashioned New England winter" is not a thing of the past. However, the following hardy souls were on deck: Bunny Ames, Bill Booth, Nick Carter, Leslie Ellis, and Joe Wattles. Some of us who came early captured a table in the Cocktail Lounge, which on a Wednesday is at a premium. Over our various libations and ample supply of hors d'oeuvres, we swapped news of absent classmates while awaiting latecomers who didn't come. About 6:30 we adjourned to our private dining room where we enjoyed the usual excellent dinner of our choice. After dinner Joe Wattles showed some of his fine Kodachromes, including some taken from the air by Bill Booth during construction of the new golf course at Foxboro, Mass.

From reply cards received we learned that Bill Barton is spending the winter in Sarasota, Fla., that Miles Sampson was leaving shortly for Florida, and Myron Davis for several months in Mexico, where he visited last winter and took such fine Kodachromes. Mat Porosky is recuperating from an operation at the Hotel Kenmore, Boston. Best wishes, Mat, for an early recovery. I wish more of you fellows would send in the reply cards, even if you can't come to the dinner with some news of yourself. At least we would know you are still alive.

Remember the Alumni Fund, and if you haven't as yet subscribed, please do so soon. All gifts help to build up our 50th-Year Gift to the Institute, which, as you know, comes in 1958. We are sorry to report the death, on November 11, 1956, of Arthur K. Poor at his home in Marblehead, Mass., and also the death on December 10, 1956, of Stephen C. Lyon at his home in Providence, R. I. Steve was a most faithful member of the Class, and even with his physical handicaps never missed a Class dinner or a reunion.

We are going to miss Steve. H.A.S.N.? — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Assistant Secretary*, 230 Melrose Street, Melrose 76, Mass.

1909

In the May Review we told of Mrs. Carl (Hazel) Gram having purchased a house in Levittown, Pa. Gloria was living with her and was about to obtain a degree in Arts and Crafts at Temple University. Last June, Hazel, who was stopping with Carl's sister, Mrs. Watts, in Newton, paid a visit to the secretary and Muriel. Later we all dropped in on Madge and Henry Spencer, II, who live nearby. She discussed with us the possibility of the widows establishing a 1909 scholarship fund in memory of their late husbands. We next heard from her at Christmas time from New Mexico. She stated: "Gloria suddenly decided to take a semester here at the University of New Mexico, so we closed the house, took the two poodles, and left August 20, drove 4,500 miles, arrived September 16. She loves it, but I prefer the green trees at home. Every spare minute we go to see some mountains, caves, canyons, or Indian reservation. [Gloria is one of] the rock collectors who take overnight trips into the mountains around here, and she loves that. She also rides 'Red Rider's' horse for him." Hazel also stated that she was then preparing to start the aforesaid scholarship fund.

Again she wrote shortly after New Year's: "Gloria and I went to Las Vegas for Christmas, saw Painted Desert, Petrified Forest, Grand Canyon, Hoover Dam on the way; visited Indian Reservation at Zuni on way back. Lovely trip. Las Vegas fabulous but once is enough. Not at all like Christmas." Hazel further stated that she and Gloria were returning to Levittown soon, and then she would send a check for \$2,000 to start the Fund. Later, when the Fund has been established, we will describe it in some detail, such as its name, the opportunity for other widows to contribute, its uses, etc.

Willis R. Salisbury '12, Secretary of the Salisbury Company of Minneapolis, Minn., sent us a clipping from the Minneapolis *Star* telling of the retirement of Daniel Belcher, I, Senior Vice-president of Bemis Brothers Bag Company, after 45 years of service with the company, 34 years of which were spent in Minneapolis. He joined the company in 1911, was elected director in 1917 at the age of 31, and was named the head of the engineering department in St. Louis. In 1922 he became manager of the Minneapolis factory, becoming vice-president in 1934. As a result of his close association with the Minneapolis flour millers, he developed the Bemis Deltaseal packing machine which is now widely used in closing small paper bags carrying food products to American and foreign housewives. He headed the research division which did much to develop new products.

George, II, and Marcia Wallis have advised us that they are leaving January 15 for Florida to be gone three months. At this time, with the thermometer 16 de-

greens below zero around Boston, we feel that they are showing excellent judgment. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: HARVEY S. PARDEE, 10445 Johanna Avenue, Sunland, Calif. MAURICE R. SCHARFF, 250 East 43d Street, New York 17, N. Y. GEORGE E. WALLIS, Wenham, Mass.

1910

I reported in the last issue that V. T. H. Bien made a promise of a letter for the *Class notes*. Well, Bieney came through. It is his annual Christmas Bulletin. "Last year we just about shot our bolt with the Bulletin. It was as Babbie said a 'summing up,' with its pictorial review. Little of special interest has happened this year. We seem to be about summed up. The most unusual event was V. T.'s two weeks and two days in the hospital for a 'check-up.' This was, in his mind, two weeks and two days too much. The result: he should go on a diet, which spells misery for him. The diet is simple enough. If it is a favorite dish or you crave it, you can't have it. The doctor told him he would probably live to a ripe old age — but what a way to live.

"One other thing happened and has a new goal in it for us — maybe we are not entirely summed up after all. In the dim ages of the past, when we built Boxford on less than a shoe-string, land around us was undeveloped. We had more land than we needed, but now houses are pushing in all around us. It made little sense to keep our woods as they were. In order to develop our land we had to buy more for streets and access to the main road — nearly 15 acres in all. But, how broke we are. Our motive was to protect ourselves and our neighborhood from the creeping blight of unattractive houses, the present vogue being split-levels, and very ugly. We are insisting that all of the houses in the subdivision be of a pleasing traditional type. There were endless, exasperating and frustrating delays. At times it seemed the whole program might collapse. Fortunately, that is past history. The plat is now on record. We have started opening up the roads and already have sold and are selling lots.

"As for the second generation, Bettina is becoming more and more a career girl, with increased writing and speaking engagements. She is on the staff of the Foundation for Economic Education, in Irvington-on-Hudson, N. Y. She is re-studying German, with a definite aim in mind. Phyllida's family remains happy and well — her oldest now in Junior High. Her school has almost doubled its number by adding a kindergarten. Herb and Jan are still enthusiastic rock-climbers, and the Conn Leathercraft increases its business each Christmas. This year they have been entertaining a good deal. They have cut a tiny door in their own door for their little friends — chipmunks. This they keep open unless too busy. Often, when closed, these little guests chatter outside, demanding entrance. Once Herb found a chipmunk nibbling on the opposite side of his sandwich. One fell into the stove, and was pulled out with nothing worse than

a singed coat which now distinguishes him from the rest."

I have had another letter from L. O. French. He is evidently going strong, as he says: "I am at present head over heels in a patent law-suit, and have been working days and some nights, including holidays. Court work necessitates working on a close schedule to meet definitely fixed dates. As this is the first case I have had in quite a few years, there are many angles of court practice I have had to go into."

Some time ago I wrote that Al Huckins had retired, and then I had to retract. This time I have it direct from Al that he is retiring after January 1. Al lives in Rockport, Mass., and it is a most delightful place. He recommended that I report on the tower of the First Church of Rockport, built in 1804, of which Al is a member. I have had to inspect this tower three times, and every visit has been on perfect days. The view from the tower over the town out to the ocean is beautiful. I really envy Al living where he has the view of the ocean. I believe I could enjoy retirement if I could live near the ocean and enjoy the fine as well as stormy weather. Anyway, it is official that Al has retired. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

1911

A returned letter indicated the death of a one-time member of the Class, Silas M. Ratzkoff, II, 245 East 21st Street, New York City. We did our best to get further information, but were only able to find that he had died August 3. This raised the number of Eleveners who passed on in 1956 to nine.

There were just a dozen of us at the new quarters of the M.I.T. Club of New York in the Hotel Chatham, 48th Street and Vanderbilt Avenue, Tuesday, January 8, for what has now come to be an annual "Welcome to Dennie" Class luncheon. It is held midway in the three-day annual meeting of the American Retail Association Executives, which I attend each year at Hotel Statler in connection with the National Retail Dry Goods Association's annual trade show and convention.

For the third successive year there was an exhibit of art work done by classmates, and the event, arranged annually by President Don Stevens, II, was this year in charge of Phil Caldwell, I. Those present were: Royal Barton, VI; Jim Campbell, I; Admiral Luis deFlorez, II; Joe Harrington, VI; C. R. Johnson, X; General George Kenney, II; Frank "Pat" Russell, II; Isidore Spector, II; and Irv Young, I. Joe Harrington exhibited eight water colors, two of them portraits he had done at his Saturday morning art class, and the others land- and sea-scapes done in Maine. President Don had two oil paintings, "Morning Mist" and "Tulip Time," while Chairman Phil had an interesting oil painting — a country scene featuring a cottage by a bridge. Something decidedly new was added when Pat Russell showed a mosaic rooster — his start in that type of work.

Following a social hour and delicious luncheon, we had our usual talk-around, prior to which President Don expressed how pleased he knew we all were to have our admiral and general both present. During lunch there was a verbal "Army-Navy" game that was most interesting and thought-provoking. Jim Campbell, reporting that his engineering firm of Eadie, Freund and Campbell had just concluded one of its biggest and best years, had to leave early to get to a luncheon of the New York Association of Consulting Engineers, at which he was to give a report for the committee on codes and laws, of which he is currently chairman.

It was my good fortune to be able to report that 1911 is again off to a good start in Alumni Fund XVI and, in the first progress report, we are fifth in percentage of class-subscribing. Our initial average gift, however, was \$15 lower than at the same time a year ago, our 45th year anniversary. Following a recital of the nine classmates who have died during 1956, we all stood in silent tribute to their memory.

President Don told us he had done a lot of traveling since he and Lois and his mother attended the reunion at Snow Inn, Harwichport, last June. First, they returned there for a longer visit after taking Don's mother to Northampton, Mass., for a visit. Later, Don and Lois made two trips — one by auto, one by plane — to Niles, Mich., where their son, Read, and his family live. They also sandwiched in a trip to Monhegan Island, Maine, and a visit to their daughter and her family in Cooperstown, N. Y. "You gotta keep punchin'," Don concluded, "and my painting is a life-saver!" He also continues as a director of the First National Bank of Patterson, not far from the Stevens' home in Ridgewood, where once again I had dinner and spent the night as their guest.

Speaking of traveling, General George said he spent 226 days "on the road" last year as president of the Arthritis and Rheumatism Foundation, for now there are 50 chapters throughout the country, where five years ago when he assumed the leadership there were but eight. Last year the foundation raised \$3,000,000 — four times what they raised the year he started. One-third of this goes to research, he said, the balance to treatments, with great emphasis on preventive measures in the research program. He told of improved interest in the work of the foundation through publicity, and pointed out that women are three times more prone to arthritis than men, with high heels a possible factor in this three-one ratio. The majority of cases occur between the age limits of 18-45, the most productive years of many people's lives. During lunch he had told us he was still pessimistic about Russia, believing that we can't afford to let down our guard one iota, for the Soviet gang is just waiting until they're sure they can go through with atomic warfare of some sort before attacking.

Admiral Luis is still actively carrying on his consulting engineering firm's practice and does much Navy work. He is also very active now in his new position

as head of Flight Safety Foundation, 468 Fourth Avenue, New York 16, about which we wrote in some detail in the January Class notes. Royal Barton, who retired from Ebasco in August, 1954, said he and Jessie spent the first winter with her father in Florida and the second with their daughter in Hawaii. Now they have sold their home in Mountain Lakes, N. J., and again are leaving at once to spend the winter with her father, so their mail address until further notice will be: 4790 Bay Point Road, Miami, Fla. While there, he said, they'll look around and try to find a place to settle.

Chairman Phil said he had thought of retiring this January first, but his wife and others persuaded him to continue as first vice-president of Robertson Paper Box Company. In addition to his painting hobby, Phil has a woodworking shop in his Wilton, Conn., home and does some cabinet work. He has built a number of feeding stations for the birds, as he has been interested in ornithology since he was a youngster. He also has a sideline — manufacture of golf clubs and equipment with a top flight professional golfer. Retire? Heck, no!

Joe Harrington, having retired three years ago, is now an active nuclear energy consultant for the Nuclear Energy Research Bureau at 68 William Street, New York 5. He and Rose sailed from New York October 10 for a fine European trip, leaving Le Havre, France, for the return trip November 20. In spite of some rather poor weather, they saw a lot in England, Ireland, Belgium, Holland, Italy, and France. They were particularly impressed with Florence, Italy, from an art standpoint. Joe said he was much impressed with the sincerity, knowledge, ambition, and patience of European engineers and scientists, particularly in Belgium. He feels the biggest advances are being made in England in the field of nuclear energy, probably brought about by the Suez crisis and oil shortage.

C. R. Johnson, X, is more than happy the way his family business — he and his son — has progressed in eight years, for now it has reached international scope in the demands for his catalyst for rubber work. He started this business, Spencer Products, back in 1948 after 37 years of growing ambition, and since taking his son into the business it has grown remarkably and is now most successful. Pat Russell, who is still in real estate, said he took a trip abroad last spring and, while in Italy, became intrigued with mosaic work — so much so, in fact, that he now has taken it up as a hobby and is very much interested. His initial piece, a rooster, was cleverly designed and executed. Isidore Spector reported that he and his partner are still active in insurance work, operating as Spector and Chertoff, Inc., 120 Liberty Street, New York 6. Irving Young completed the talk-around, saying he was delighted to be able to attend one of these Class luncheons — his first. He is very happy in his new married life, now nine months old, following his retirement three years ago. He and his bride live at his old home: 54 Warwick Road, East Orange, N.J.

Once again Sara and I are deeply

grateful to the many classmates who sent us Christmas cards. Admiral deFlorez has another gadget-saturated jet-plane he was flying as a greeting card, while the much-traveled Jim Duffy, VI, of Chicago, used a world-globe motif for his greetings, and Nat Seeley's usual family card showed him and Louise and several grandchildren, including his newest grandson and namesake, two months old. The Harold Babbitts had an ingenious map of North and South America, spotted for places visited in '56 and with an interesting running commentary of his present United States Operation Mission work. Similarly, the Paul Cushmans of Oklahoma City, issued a three-page letter telling of their 1956 peregrinations.

A number of the "regulars" at the New York annual Class luncheon happened to be out of town this year, including Dick Gould, Bob Morse, Dick Ranger, and Harry Tisdale, all of whom sent regrets. Harry Tisdale wrote from Fort Myers Beach, Fla., that he and Grace had been there since December 5, with wonderful weather and every day good fishing. "Sorry I'll miss the lunch January 8," he concludes. "We will be back home in Waterford, Conn., last of year."

Had a lovely Christmas card from Palma de Mallorca, Spain, from Leroy "Fitz" Fitzherbert, I, retired: "Marj and I have been in Europe since September, touring from Denmark down through Germany, France, and Italy to Spain — following the good weather. We like this Spanish island very much and have enjoyed a month here. Back home in January." Had a nice note from Edwin Pugsley, VI, retired, long a resident of New Haven, Conn. — now with three addresses. He wrote from Post Office Box 396, Monticello, Fla.: "Will write now, lest I forget. I own and operate a small plantation, where I was raised as a boy in the old plantation section of the State — 26 miles east of Tallahassee. There are no tourists and life proceeds leisurely. Have a small grove of tung trees that generally succeed in having themselves frozen in the late frosts. Our general routine is to go to the plantation about January 15 and stay until mid-April, then back to 76 Everit Street, New Haven, until about mid-May or first of June, depending on the weather, then to Leete's Island, Guilford, Conn., for the summer. Curiously, this is not an island — just the name of the railroad station. We return about October 15 to New Haven, which is our legal residence, until time to go south again."

If you never heard of tung trees, just look in the dictionary — I did — and you'll find they grow in China, Japan, and Florida. Speaking of the South, I had a card from "Jess" Frazier, widow of Don Frazier, II, advising she has left Richmond, Va., and is now at 431 East 20th Street, Apartment 11-D, New York 10, N.Y. "I miss Don more and more every day," she wrote.

When these notes appear it will be almost spring, but there will still be time to write that winter letter to Dennie if you Do It Now! Nuf ced. — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Framingham, Mass. JOHN A.

HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

Doc Cook and his wife report a very pleasant visit with Bill and Mrs. Raymond at the Tamworth Inn, N. H., where they were both spending the Columbus Day week end, enjoying the autumn foliage. Doc also tells of a very enjoyable visit with Harold Brackett, who is now retiring into central Maine. They were hunting and fishing around Telos Lake using a hydroplane to get about. They also covered the Little Ossipee and Hancock Pond. No deer were to be found but there were plenty of partridge and trout. Harold Brackett is at the old family homestead in Limerick, Maine, and finds plenty to do in modernizing the house and revitalizing the farm.

Doc Cook, who has been president of the Lynn Gas and Electric Company for many years, reports that his company is merging with the New England Electric System on a two-for-one stock exchange. Doc plans to retire later this year and to enjoy many things that he has been looking forward to doing.

Randall Cremer received a note from me which followed him through France and Spain. Randall and Dorothy are covering many places that they have looked forward to seeing when he retired from active business. About six months ago they left for Europe and plan to spend the winter seeing the sights. On Randall's return he plans to do some outside consulting work, just to keep his hand in. Goats Allen is retiring from the New York State Department of Health after 26 years of leadership in his field. They are now living at 418 Wellington Road, Delmar, N. Y. Mrs. Allen's arthritis is slowly becoming worse, and Goats reports a mild heart condition. They are looking forward to a rest after a very strenuous life.

You will shortly be receiving notice of our 45th Reunion which is to be held at Snow Inn, Harwichport, on June 7, 8 and 9. We return to Cambridge for Alumni Day at the Institute on the 10th. Snow Inn is a perfect place for an occasion of this kind, so let's make this a big one and get re-acquainted. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. LESTER M. WHITE, *Assistant Secretary*, 1230 N.E. 102d Street, Miami 38, Fla.

1913

Well! Another month has rolled around. This past holiday season with its celebrations, parties, together with the making of resolutions leaves most of us somewhat confused. Another 1913-er has joined our ever-increasing ranks of retirement. George E. Leavitt, Buffalo Hollow Road, Glen Gardner, N. J., writes, and we quote: "Retired September 1, 1956, and moved to our little week-end retreat on four acres in the Rolling Hills of Hunterdon County, N. J. Thus far, 'retired' is a misnomer, for I have been and will continue to be busy with alterations, repairs, and the painting and decorating of the old farm house (*Falling Timbers*)

which is now my permanent home. Should be a more frequent contributor to our Class notes." Good luck, George. Let's hear from you in more detail of your past accomplishments, and your future plans.

In our Class notes of the November issue of *The Review*, we described the laudable work being performed by our classmate, Edward E. Smith. Now with a sorrowful heart we must report the passing of our authority on municipal engineering. Edward, after several heart attacks during the preceding weeks, was stricken Friday, September 7, 1956, and was rushed to the Memorial Hospital in Lima, Ohio. Despite considerable medical treatment, he never recovered, and finally passed on at noon, Saturday, September 8, 1956. Ed was born in Weston, Mass., on August 16, 1891. He was educated in the local grade schools, Roxbury High School, Boston, Mass. He received his degree in 1913 at M.I.T. specializing in bacteriological and biological engineering. He took graduate work at the University of Wisconsin, and attended the School for Overseas Administration at Harvard University in 1943. Smith spent the major portion of his engineering life in Public Health Service with the New York State Department, U. S. Health Service in Ohio, Charleston, W. Va., and for the last four decades he was associated with the City Utilities Department of Lima, Ohio. He has served as the chief of the city utilities in charge of eight city water, sewage, treatment, garbage, and refuse divisions. He spent 21 months overseas during World War II as a technical specialist with the American Military Government in North Africa, Sardinia, and Italy, and was discharged with the rank of major. Ed Smith belonged to many engineering and masonic societies as well as the Reserve Officers' Association, the American Legion, the Veterans of Foreign Wars, Kiwanis Club, Torch Club, and the Elks. Between his various endeavors in writing engineering papers, his love for operas and high-grade pops and concerts, his hobbies were legion. It is with the greatest amount of sympathy that the Class of 1913 extends its most sincere condolences to Mrs. Dorothy Smith and their son, Billy.

Again, we welcome another worthy classmate to this rapidly growing Club of Retired M.I.T. Thirteeners. Yes, "Dr. Arthur W. Kenney, a pioneer in the application of physics to industrial chemical research throughout his career with Du Pont, retires from the company's Chemical Department today [November 30, 1956]." Thus we are informed by an official release from the Du Pont Company. As many of you know, Arthur was born in Pownal, Maine, on November 15, 1891. He received his bachelor's degree in 1913, his master's degree in 1914, and his doctorate in 1917 in physical chemistry, as well as being a research associate at M.I.T. in his final year of study. Arthur served his country in both World Wars: in World War I as a captain in the Chemical Warfare Service of the U.S. Army; in World War II as a chief technical aide with the National Research Committee.

Dr. Kenney joined the Du Pont Com-

pany in 1919, and held many important positions, including the chief of the library service at the Experimental Station, developed it into the Intelligence Division, with important responsibilities for organization and critical analysis of published technical and scientific information. Kenney was head of the Chemical Department's physics section from 1932 to 1952. He was responsible for the development of important studies of X-ray diffraction in connection with the synthesizing of polymers which assisted in the creation of nylon, titanium pigments, and many other Du Pont products. Dr. Kenney has served as a consultant since 1952 to the Chemical Department and management staff in the planning of physical research, especially in the nuclear field, including sources and effects of high energy ionizing radiation.

Arthur is a member of the American Physical Society, the American Nuclear Society, the American Chemical Society, and the Optical Society of America. He is a former chairman of the Delaware Section of the American Chemical Society. He has been active for many years in Wilmington music circles, and was one of the organizers of the first band and orchestra at the Experimental Station. He was also a founder of the Great Books study groups in Wilmington, and has served as leader of one of the groups. Arthur's and Mrs. Kenney's immediate plans after retirement include an extensive trip abroad early next spring. Well, Arthur, you must need plenty of rest in your retirement after all that research. Remember the next Reunion in 1958.

As you have already been informed, the Class of 1913 presented our beloved President William A. Ready with a citation before his death, and a committee was appointed by the M.I.T. Alumni Council to draw up and present a resolution to the January Council Meeting in memory of our departed friend. This committee consists of Edward H. Cameron, William R. Mattson, Joseph C. MacKinnon, and George P. Capen. It is printed here in its entirety:

"Whereas, William A. Ready, M.I.T. Class of 1913, passed away on November 20, 1956, we feel it fitting to make official recognition of his loyalty to his Alma Mater and his distinguished professional career by means of the resolution presented herewith: For 26 years, he represented the M.I.T. Club of Nashville, Tenn., on the Alumni Council. From 1946 to 1949 he was on the Audit and Budget Committee, and from 1949 to 1952 on the Committee of Nominations for Departmental Visiting Committees, serving as chairman during 1951 and 1952.

"When an undergraduate he was active in Class affairs, and at the first reunion of the Class of 1913, he was elected Class President and continued in this office until his death. The esteem and affection in which he was held by the Class is best shown by the following citation. Whereas: The Class of 1913, M.I.T., at an official meeting held at the 43d Reunion at the Coonamessett Inn on June 9, 1956, voted unanimously to recognize the services of certain members of the Class, the following citation is hereby pre-

sented to William A. Ready.

"For your long and excellent service as President of the Class of 1913, as an outstanding leader, a faithful and efficient worker for your Class, an inspiration to your classmates, as a business executive and beloved family man, and for the honor and prestige you have brought to M.I.T. and the Class of 1913, this citation of distinguished merit is bestowed upon you. It is authorized that this citation be given President William A. Ready, and that a copy be filed in the permanent records of the Class.

"Upon graduation he began his career with the Stone and Webster Company and, later, was associated with the United Fruit Company. He joined the National Company in 1915 and became president of the firm in 1922, holding that position until he retired in 1954. During the 32 years he headed the company it supplied a large amount of communications equipment to the Navy, particularly during World War II. The company also developed many new innovations in the field of communications. During his career as a business executive and electronics leader he was associated as a president or director of a number of industrial and electronics firms.

"He was president of the Ames Shovel and Tool Company, 1928-1933; a director and chief engineer of the Ames Baldwin Wyoming Company, 1931-1937; president and director, Manufacturing Engineers Corporation; Browning Laboratory; Malden Realty Company; The Sanborn Company; Judson Thompson Company, and the Ames Company. He was a member of the American Institute of Electrical Engineers, Institute of Radio Engineers, and the Engineering Society of New England. Other activities included his membership in the National Rifle Association and the Brae Burn Country Club.

"The Ready family were practically members of the Class of 1913, for it had given us the first Class baby, Neva Marie Ready, born in the sophomore year. In those days this was an almost unprecedented event, and at each Class reunion the family's attendance was a happy feature. Surviving William Ready are his wife, Mrs. Neva (Haynes) Ready; two daughters, Mrs. John Reed Baine, and Mrs. Charles Christian Hornbostel, and a son, William P. Ready.

"Be it therefore resolved as follows: (1) That in the death of William A. Ready, the Massachusetts Institute of Technology and the Class of 1913 have lost a loyal and distinguished Alumnus, whose memory will ever be an inspiration to all who knew him. (2) That the original copy of these resolutions be given to his widow, Mrs. Neva Haynes Ready. (3) That copies be incorporated in the records of the Alumni Council of M.I.T. and of the Class of 1913. Signed: William R. Mattson '13, Joseph C. MacKinnon '13, George P. Capen '13, Edward H. Cameron '13."

We have received a clipping from the *Waltham News Tribune* dated December 29, 1956, which reads as follows: "*Alderman Retires January 1 at Hub Firm: William R. Mattson, Vice-president of the Newton Board of Aldermen, will retire January 1 as vice-president of the Ameri-*

can Locker Company, Inc., Boston. Mr. Mattson, who lives at 28 Brookdale Road, Newtonville, has been with the Company since 1935. A graduate of M.I.T., Class of 1913, Mr. Mattson was formerly on the staff of Babson Institute in Wellesley. During his association with the American Locker Company, he has been instrumental in putting scientific analysis to work in the field of automatic parcel checking. A World War I veteran with overseas service, Mr. Mattson in addition to his political career has been active in fund raising drives, including Community Chest and Red Cross. During World War II he served as all-Newton chairman for USO Fund Raising Campaign. He is a charter member of the Newton Welfare Board. At present he is chairman of the Claims and Rules Committee of the Board of Aldermen. Mr. Mattson's plans for the immediate future include an extended trip to Nassau and Fort Lauderdale, Fla. He expects to leave shortly after New Year's and return to Newton late in April." All this we know. Last Saturday evening the Capen family had dinner and spent the evening with Bill and Janet. It was really a farewell party as Janet has now departed by the southern route for California, and particularly Frisco, there to make her way and livelihood. Look out you Frisco boys. Here comes our Queen.

Received a short note from Charlie Thompson, now visiting his daughter in Beaumont, Calif., and we quote in part: "Any time you want to go on a vacation, consult me about the weather. Escaped the cold and snow back East and helped bring some rain here. Have had some rainy days in the last two weeks. Very welcome moisture. No rain before since last October. Note by newspaper report it was down to four degrees below yesterday in Boston." Yes, Charlie is right, but in Canton the temperature dropped to a mere 20 below. Well, my tired as well as retired friends, that's all — there is no more. — GEORGE P. CAPEN, *Secretary-Treasurer*, 623 Chapman Street, Canton, Mass.

1914

In January your secretary had the pleasure of visiting Norwich University at Northfield, Vt., to see the new carillon tower and to hear the bells played. This carillon is one of the very few at New England colleges. The bells were a gift of a friend of Norwich, while the handsome tower on the hilltop campus was the gift of Mrs. Donald Boyer, the widow of our classmate, Porter Adams, a former president of Norwich. It was given in memory of Porter Adams' mother, who was a loyal friend of Norwich.

Ray Dinsmore, Vice-president in charge of research at Goodyear Tire and Rubber Company, has announced the completion of a radiation laboratory for the exploration and development of rubber products which will perform satisfactorily in a radiation environment. Rubber is particularly susceptible to excessive radiation doses. One important objective is to obtain rubber components which can be used on atomic-powered aircraft of the future.

A note from Bob Moorhouse tells that

he has just heard from Hibbard Busby telling of his retirement from his government position. He has not stopped work. He is located at Springfield, Mass., and is a consultant with United Engineers, Inc., doing process evaluation work in a wide variety of fields. Howe Taylor, who is a practicing architect in Ann Arbor, Mich., has again been appointed a member of the Board of Appeals for Zoning in that city. While we do not see Howe often enough in Cambridge, your secretary hears from him and his family from time to time.

Another classmate to join the retired group is Harold Bent, Vice-president and Works Manager of the Newport News Shipbuilding Company, after 42 years with that company. It is a pleasure to receive such a pleasant retirement letter from Bent. Oftentimes, persons seem very resentful when their retirement time actually arrives. Bent and his wife plan to do quite a bit of traveling, which they had hoped to do previously but were unable to do because his activity as superintendent of the Shipyard made his presence there necessary. He has been responsible for completion of many large ships, including the recent large aircraft carriers for our Navy. Unfortunately, in 1950 his wife had to spend nine weeks at the Memorial Center in New York and subsequently returned several times for treatment there. Now she is in good health, so that both Bent and she do not feel they should push their luck any further and are retiring now to do many things that they had previously been unable to do.

Another Alumni Fund year is rapidly drawing to a close. Have you made your contribution to our Fifty-Year Fund? Fourteen has made a good record in the past. Let us finish up with a fine record. For any questions about this combined Alumni Fund-1914 Fifty-Year Fund, just drop a note to Herman Affel. — H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass. H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N. J.

1916

Our worthy President, Ralph Fletcher, acknowledges with pleasure the receipt of Christmas cards from the following: Steve Whitney, Cy Guething, Herb Gilkey, Hal Neilson, Harold Dodge, Dan Comiskey, Al Lovenberg, Izzy Richmond, Irving McDaniel, Ray Stowell, Bill Barrett, Vert Young, Bill Drummey, Steve Brophy, and Ed Weissbach. Recent word from Ralph says, yes indeed, there will be a Reunion this June, our 41st. Ralph is working on the arrangements now and expects to have more details ready in time so that we can tell the story in the next issue. So save your pennies and plan to be at the Cape in June.

Back in December, in a little bulletin called "M.I.T. Alumni Make News," sent out to all Alumni regarding events of 1956, the Class of 1916 came in for two mentions. The first, under "Honors, New Presidents of Professional Societies," listed Joseph W. Barker '16, American Society of Mechanical Engineers, and the

second, under "Medals, Awards, and Citations," listed Robert E. Wilson '16, Washington Award, made by five major engineering societies. Of these, of course, we're proud! A note from Jimmy Evans back in November said he had just seen Joe Barker at an American Society of Mechanical Engineers meeting in New York. He said Joe looked very well, and then continued: "Some day we should get Joe to explain the 'blow-by-blow' procedure he used as a Course VI graduate to become president of Course II's A.S.M.E."

Our mail-box brought word from Herb Mendelson with a brief account of the cruise that he and Vi took up to Cape Cod and Martha's Vineyard last summer aboard *Pervian III* with a stopover at Osterville for three days. He adds: "Our spare hours, in an uneventful summer, were spent in feeding, training, and keeping out of mischief, our black Labrador Retriever, 'Urban Onyx,' better known as Jet to his friends and those who love him. Whenever our personal larder runs low, we always manage to get a superb meal by drawing on Jet's hamburger or beef-steak, neither of which we can afford at our own table. During pre-election weeks, I spent some time in the interests of 'Ike and Dick.' The principal result of my efforts was a brief pamphlet entitled 'Your Inflation.' Until I completed my work, I had no idea how badly 'the thrifty' fared during the past 20 years. We sure have been fooled. The aforementioned pamphlet is in reality a revised chapter of a much longer article I've been working on for 17 years. I don't expect it will ever see the light of day. Next July, we hope to go on our second safari to British East Africa and also endeavor to take a look at the Pygmies in the Belgian Congo. I'm aiming to improve my photography and, if I succeed, I should bring back some interesting shots — 'stills' and 'movies.' Vi reminded me not to forget to tell you about the three grandchildren: Arne, Jr., Allan, and Ann, ranging from three and a half years to one year, in the order named. They're too smart for me and also at times for their parents. They certainly can stimulate one's mental processes." Hear, hear!!

A note from John Fairfield (professor at Rensselaer Polytechnic) says that (a) there's no news because he's too busy to take stock, *but* (b) after the Reunion it was discovered that he and Howard Green had a common ancestor six generations back. He also indicated that John Eberhardt still lives in Arlington and is in consulting work.

We have a most interesting Christmas letter from Virginia and Joel Connelly who have been in the Far East — first in the Philippines and now in Formosa — for four years. Wish we had space for the whole letter but must be satisfied to give only a few chunks of a colorful recital. They have been assigned to the Mutual Security Mission to China and have lived now in Taiwan for a year and a quarter. During that time they've had one home leave, circling the globe via Singapore, Colombo, Bombay, Cairo, Rome, Stockholm, London, the United States, Tokyo, and back to Taiwan — with camel rides, elephant rides, and Great Pyramid climb-

ing. Joel's work is to advise the health authorities of Free China in their public health activities, particularly in the field of sanitary engineering. The joint letter says: "One of the interesting experiences of the past few months was a visit to Orchid Island. This is a small island in the Pacific Ocean, seldom visited by white people, off the east coast of Taiwan. The people who inhabit this lonely islet are very primitive. They are of Malayan race. The well-dressed Orchid Island male is attired in a G-string. This is often the color of the wearer's skin, and, at a distance, he looks naked in such cases. Both of us went there on a fishing vessel, sleeping on the vessel's deck the first night since, in the absence of a harbor or pier, it was considered too dangerous to attempt to land through the heavy surf after dark.

"Formosa is beautiful with mountains nearly as high as Pikes Peak, but which appear higher because their bases are near sea level. We live in a Japanese-style house, with sliding paper partitions between the rooms. We have a man cook and a woman maid. All around the house is a high wall, enclosing a tiny yard. This is good for privacy, but the wall keeps out the breeze during the long, hot summer. However, we brought our air-conditioner from Manila, which helps a lot.

"Joel has climbed Lion Head Mountain recently. On its slope are several very old temples. We have seen the aborigines, descendants of the original inhabitants before the Chinese came to Taiwan some hundreds of years ago. Some were head hunters until recently. The aborigines are musical. Racially they resemble the mountain tribes of the Philippines. Some of the older women have broad blue tattoo marks around their mouths and up to their temples, and a vertical mark on their foreheads. [Snapshot received.] They wear beautiful bright-colored costumes with elaborate headdresses, unaltered for generations, at their festivals, several of which we have seen. We have even danced with them.

"Taipei, the capital city, in which we live, is much more oriental in appearance than Manila. Signs on stores are increasingly seen in both English and Chinese, largely because of the number of Americans here in the Military Assistance Advisory Group. Their presence enables us to have two post exchanges, a commissary, an Officers' Open Mess, and an Army Post Office, all of which State Department officials, such as we, are permitted to use. The APO saves us lots of money on postage. Joel has become a member of the Rotary Club of Taipei, the China Institute of Engineers, the Taiwan Water Works Association, the Sino-American Cultural and Economic Association, and the American University Club." They wind up by saying they'd appreciate letters or newspaper clippings about things of interest from time to time, since their few English newspapers have little local news from the States or Philippines. They may be addressed: MSM/C, APO 63, San Francisco, Calif., using only a six cent air mail stamp for one ounce.

We were glad to receive a note from Harold Gray regarding the Reunion. Har-

old is president of Gray-Syracuse, Inc., Manlius, N. Y. (near Syracuse), makers of small precision castings of ferrous and non-ferrous alloys. Here's what he says: "The 40th Reunion trip to New England and Cape Cod were the outstanding high lights of the summer. It was an outstanding reunion in spite of the poor golf that I played. I didn't know what was wrong at the time, but found out about as soon as I got home, as I had to spend a little time in the hospital getting fixed up. Fortunately, things straightened out, and I was able to take a fishing trip to the Laurentides in September. Things go along pretty much the same from day to day, and there is not very much in the way of news of interest to other members of the Class. The move of my investment casting plant to larger quarters in one of the Syracuse suburbs is working out very nicely, and we are making more and better castings than we ever could have done in the old location."

Harold Mills lives nearby (to your secretary) in Mountain Lakes, N. J., and has given good advice on the advantages of gas heating and super-de-luxe hi-fi systems. In response to an urgent request that he give us a story, he came along with this interesting recital of his doings: "Our secretary has prodded me on reporting on my activities, and it seems it would be a smart thing to start the new year by just doing that. I retired from the Bell Telephone Laboratories about three years before the compulsory retirement age, partly on my wife's urging and partly because we wanted to do some of the things that we like to do — such as traveling, camping, and exploring the United States in a mild way — while I still had left a reasonable amount of pep and vigor. One of my first projects was to construct a Klipschorn to reproduce well the low frequency end of my high fidelity audio system. This required about two months of very careful cabinet work from which I got a lot of fun and satisfaction. Then I bought a number of kits of various components of the system, such as amplifiers to assemble, and now I have a reasonably good reproducer of recorded and radio music with a minimum of distortion." [It is good! — signed, Secretary.]

"Since retirement we have been on many camping trips, the most extensive being a 10,500-mile trip in which we pretty much circled our country. All together we have visited and camped in most of the National Parks and Monuments, and visited many Indian cliff dwellings and pueblos in which we are especially interested. We drove down valleys and over 12,000-foot mountains with little trouble. This trip took two months. We camped most of the time and prepared meals over our three-burner stove with plenty of variety in food. With no planned itinerary of time and place, we had a marvelous feeling of independence and freedom. It is so nice to be away from the ringing of the telephone. But of course the old home town does look good on returning after a long absence. The projection of the color slides we take on such trips allows us to relive them on cold winter evenings, and

we become enthused into making plans for a trip in the coming spring. We plan to take a trip in March or April to see the desert wild flowers, at which time they are a blanket of color in southern California, New Mexico, and Arizona.

"My wife and I like some of the various puzzle contests that are appearing. Although we haven't won much from them, since we have had a lot of fun, the time hasn't been wholly wasted. We have a married son living nearby, and two daughters living in the bay area of San Francisco. And then there are the grandchildren — four of them. One can enjoy grandchildren very much — if you are not exposed to them too long at one time — a limit of four hours is just about right. When you have to be responsible for them for a week, then it is really rugged for people of our age. Some people dread retirement as they 'just don't know what they are going to do,' but if you have developed some interests and hobbies and retire in time to enjoy them, everything will be fine." Thanks for the story, Harold, and nice trip out West this spring!

Dick Berger continues actively in the news in his crusade for Cancer Prevention, Inc., of Bridgeport. A reprint from the November 1956 issue of *Nature's Path*, a magazine on health through national living, gives letters criticizing Dick's articles on cancer in *Nature's Path*, together with Dick's sharp answer to the criticisms. He winds up with: "As for cancer, I say that inasmuch as it is generally preventable, don't give it to yourself and others."

And now to close — with a note of appreciation to those who have made contributions to the column, and asking again that you write your secretary — big news, little news, who you've seen, what you've done or haven't done, where you've been or hope to go — just anything to keep us all mutually informed. — HAROLD F. DODGE, Secretary, c/o Bell Telephone Laboratories, Inc., 463 West Street, New York 14, N. Y.

1917

Your secretary has just put in a call for Class notes from the New York area. If this were to be read as it is written (January 8), we would be wishing you all a Happy and Prosperous New Year, but since you will be reading it in the March issue of *The Review* — about income tax time — we can offer you consolations and suggest that within the next five years you may be able to breathe a little easier when that date rolls around.

Bill Hunter dropped in at the M.I.T. Club of New York (Hotel Chatham) for lunch prior to taking off by air for Denver, Colo., and the Pacific Coast. Bill says: "Very little has happened worth recording since I saw you in November. I did spend a few days in Boston about Thanksgiving time, but was on the move so much I saw no one from 1917. I'm leaving January 2 for a trip to Denver and Los Angeles for about two weeks, hoping to dig up some business. Several new establishments have recently been set up in Denver in the electronics business and I'm supposed to find out if there

are any motor prospects there." (Bill is sales manager for Diehl Manufacturing Company, Somerville, N. J.) His question, "When are we going to hear about the 40th Reunion plans?" will probably be answered before these notes are read.

The 1917 table at the Silver Stein award dinner of the M.I.T. Club of New York last November was made up of the following husbands and wives: the Bill Hunters, Joe Littlefields, Dix Proctors, Win McNeills, and the Bill Newbergs. All were heartily in favor of including the wives at our 40th Reunion at Wentworth-by-the-Sea, Portsmouth, N. H., on June 7-8-9, Stan Dunning, please note.

Bill Hunter contributes the news that Ralph H. Ross has retired from AT&T Company where he was plant operating engineer for the New York office. He has given up his home in Summit, N. J., and moved to Danville, Vt. He is a trustee of St. Johnsbury Academy located where he was born. Bill says that Ralph builds hi-fi sets and has a big collection of classical music records and will keep busy trying to improve the fidelity of his record-playing equipment.

Enos Curtin and your assistant secretary had lunch together last week and tried to get Gus Farnsworth to join us. Gus sent greetings to all his friends, but stated that he had a deadline for finishing a report (consultants are always facing deadlines and I guess Coverdale and Colpitts is no exception) and could not make the luncheon. Besides, he was taking off for a two-week trip to the Pacific Coast the next day. California and business make nice companions in winter.

Enos finds time, when not engaged in buying and selling companies, and consulting on financial matters, to be chairman of the board of the American Field Service. This organization brings about 800 foreign high school students from over 30 countries each year to spend a year in a private home in the United States and go to some high school. In the summer, the A.F.S. sends about 800 American high school students abroad to spend July and August in the homes of foreign families from the same 30 countries. This is a grand way to spread good will among peoples of many countries and help each to understand the other better. Besides this most worth-while activity, Enos is an officer of the New York Lighthouse for the Blind, which does a most outstanding job for the blind. He also helps run one of New York's Hospitals, and was recently elected president of the Ophthalmological Foundation which does research and education in eye diseases. Extra-curricular activities of this kind are most worth while.

The fact that several of our New York 1917'ers did not contribute to these notes gives me an opportunity to write about some of the things that they would hesitate to tell you. Justin Basch stated that he is busy commuting between Philadelphia and New York in the interests of Oakite Products, Inc. Joe Littlefield is enjoying his fast-growing daughter of about two years, after bringing up a family of boys. He is busy solving Johns Manville's many economic and budget problems. Dick Loengard is busy with plans

to help members of the Class make suitable provisions for their gift in behalf of the Class's 50-year Reunion Fund. If you have the urge to do something along this line, write Dick a letter, c/o Chromium Corporation of America, 100 Park Avenue, New York 17, N. Y.

Your assistant secretary recently had a very pleasant visit with Harry Toole at his office at DuPont's Engineering Center in Newark, Del. Harry was one of DuPont's engineers who developed nylon. His particular part was the supervision of the design of textile equipment used to process nylon. Harry states that he expects to retire in the not-too-distant future and buy a home somewhere in Maine. Ray Stevens is a busy man these days as president of Arthur D. Little Company, to which organization he has contributed his entire career. When one sees him at all these days, it is on the run. A. D. Little has a new and larger suite of offices in the Graybar Building. Perhaps we can take a fast buck or two from Ray at golf at our 40th Reunion before he has a chance to get relaxed. Dix Proctor is "living the life of Riley" these days. He has turned the major part of his business over to relatives and keeps only the "money accounts." He is contemplating a trip of several months duration to Hawaii from New York via the Panama Canal. Between winter trips on small boats with friends, and working on his house, Dix seems to enjoy life. We have never seen him looking better.

Ken Lane has taken the job of chairman of the Alumni Fund drive next spring in Ridgewood in trying to raise Alumni average participation from about 35 per cent to 75 per cent. Summit, N. J., under the writer's chairmanship, is uniting with Ridgewood and South Orange for a pep meeting under Joe Conrad of Chick Kane's Alumni Fund office. Alan Sullivan states that things at City Service Research and Development Laboratory are taking more of his attention. They expect to open a new research laboratory soon, and he hopes that it will not interfere with his attending our 40th Reunion. Ray Brooks sends his greetings from the Bell Laboratories in Whippany, N. J. You will be sorry to learn that Frank Maguire has been ill at his home in South Orange for several months.

One of our classmates who started a new career after graduating from M.I.T. is none other than Robert Gordon Shand, Managing Editor of the New York *Daily News*. Bob writes as follows: "1956 was quite a year for me. I hit 60, became a grandfather (I could bore you for hours on that one; anyway, it's a boy), celebrated my tenth anniversary as managing editor of *The News*, and my photographic staff won a Pulitzer Prize. That's pretty good, I think, for an aging journalist." — W. I. McNEILL, Assistant Secretary, 270 Lexington Avenue, New York City, N. Y.

1918

There is frosting on the trees beyond my window pane, and the thermometer awaits some heavenly usher to request it to "Rise, please." However, I am caught in no jaws of frustration while contemplating the classmates who have retired to

the sunny South. Long years ago we were all taught that good little boys go to a cold place, naughty ones to a hot.

From Don MacArdle — he of the cornet, baton, relay team, and decomposition of phosgene — under date of Christmas Day, comes a long communication which gives evidence of his continued membership in the company of the resolute and the bold. Says he: "How could I spend a part of Christmas better than bringing you up to date? It was three years ago or more that I last wrote. At that time I was struggling to keep above water the nose of a company that had had everything in the world — sound engineering, loyal and able employees, adequate facilities, worldwide distribution — except competent management. I had been brought into the picture when the company was just about out of money. As developments proved, the only thing that could have saved it was a transfusion of half a million dollars or so, and people who had that kind of money didn't get it by pouring it into companies that were about to go down the drain, as it did at the end of 1953. By that time I had found the part of the country where I wanted to spend the rest of my working life. While in New York I had had my own firm of management consultants, and I opened an office in that field here in Dallas.

"During the next year or so I had enough business so that I ate regularly and sometimes had ice cream on my pie. About the end of 1954 I saw what looked like a good gambling chance to hit a jack pot. A manufacturing company in northern Oklahoma had progressed brilliantly while it was small enough for one man to manage it, but by the time I made contact with it the company had outgrown one-man management, and was having troubles, especially in inventory control. The company (doing about \$1,500,000 a year) had come to the point of being C.O.D. for its suppliers, yet it had continued to pile up inventory to the extent of three or four times its operating needs. My plan, to which the owner of the company agreed, was to put together a sales corporation which would act as exclusive selling agent so that the owner could do what he was best fitted for: handling the manufacturing. A small group of Dallas businessmen were prepared to put up the half million dollars needed, and negotiations went along for five or six months. A contract had been hammered out which was acceptable to both sides, but when the owner literally had the pen in his hand to sign, the negotiator for the financial group got cold feet and the whole thing collapsed. That left me high and dry. Two flops in succession had worked me down to nickels and dimes — so I was well satisfied to get back on a payroll, with the firm of Shaw and Estes, engineers and manufacturers of ground test equipment for the airplane industry, especially for the Air Force. Their specialty is post-overhaul testing facilities for jet engines, but they are also active in test instrumentation, environmental chambers, and similar testing equipment. Last September I was made director of engineering for the company, with as keen a small group of engineers as you could find from coast to coast.

"My avocation is still as busy as my business life. For the past dozen years I have been studying Beethoven, concerning myself more with his life than with his music, though the two necessarily go hand in hand. I have done published articles in musical journals in the United States and in England. I hope that within the coming week a fat book of *New Beethoven Letters*, of which I am co-author, will roll from the University of Oklahoma Press. I am already hard at work on two other books in the same field, neither approaching a popular nature, but each covering a field in which better men than I have stubbed their toes for lack of the detailed information that I am trying to dig out. For research of this kind, Dallas is nearly a desert. I am fortunate in having an inclusive Beethoven library, so I can keep at work with occasional trips to Washington and New York for the material that I don't own and can't find here. Microfilming is a great invention: a couple of years ago I secured £5 (\$14) of microfilms from the British Museum, spent a couple of hundred hours in organizing the material that they contained, and wrote a long and learned article for which I received £5.10 (\$15.40). Except that paper, postage, etc., cost \$1.50, I made money on that one. If the Letter book sells as well as a book of that type might be expected to sell, I should net about five cents an hour on the time I put into it. What can't be measured in money, though, is the satisfaction of doing a job that needs to be done, and doing it better than it has been done before.

"My family is pretty well strewn around. Father died last summer in his 91st year. My younger girl is in New York, my older girl is in San Francisco with her husband and my only grandchild. Ruth is here with me, as is her mother, a valued part of our family. The women-folk have the curious idea that the summers here are hot, but last summer we didn't have a single day over 110 degrees. On the other hand, I haven't needed to get my topcoat out this year, and may not use it all winter. I doubt if it would be possible to buy a snow shovel anywhere in the city of Dallas. Can you say the same about where you are living?" (No, Don, I can't. You can get warm shovelling snow, but you cannot keep cool at 5906 Palo Pinto Street, Dallas 6, Texas.)

According to Hipparchus, an astronomer of some 2,000 years ago, the signs of spring were the constellations of the Ram, the Bull, and the Twins. As reinterpreted by your own non-astronomic recorder of events, the signs of spring, 1957, are the Twin Macs, the second being Ed McNally—he of the Tech Show the Mandolin Club, the Orchestra, and Barbersol (no brush, no lather, no rub in). He writes: "It was good to hear from you again. I thought you knew I retired from business last year. After about six or eight months of long-anticipated loafing I found it began to pall, so I went back to school. Here I am now on the staff at Purdue University teaching mathematics to young engineers. And I love it. My older son, Daniel, is an engineer with Sikorsky, and living in Trumbull, Conn. The younger boy, Alexander, was gradu-

ated from Princeton last June, magna cum laude and Phi Beta Kappa despite his extra-curricular activities. Could be he is smarter than his dad. He toured Europe last summer in a German sports car which he brought back to Boston with him where he is attending Harvard Business School. Mrs. McNally and I expect to spend Christmas in the East with the boys. And, like you, we are planning a European trip and hoping the threatening storm over Europe will have abated by June. I want to bring back one of those sleek foreign sports cars myself. Another nice thing about teaching—vacations." Ah, Ed, you old rascal, well do I recall sitting beside you in Professor Tyler's calculus class on the second floor of Rogers Building. Friday was a nervous and fitful time for me, for each Friday Harry Tyler gave us a quiz ingeniously contrived to expose those who falteringly sought to solve those horrid equations. You always could. I often could not. But the ultimate reality of life is goodness, and life has been good to both of us.

In order to balance both ends of these notes, it is appropriate to close with a quote from Fred Philbrick's Christmas card. He says: "We stayed home last summer and found out just what a summer in Miami is like. Altogether, it was very satisfactory; the temperature was mostly in the 80's, and the sea water just about the same. I have nearly completed building another house, and am planning still another, to be started as soon as the latest one is sold." Thus does MacArdle, the chemist, do engineering; McNally, the executive, teach mathematics; Magoun, the teacher, advise executives; and Philbrick, the electrical administrator, build houses. Thus does life peel off the wrappings of its strangely diverting jokes, leaving us all crammed with possibilities of happiness and service. Have a good 1957 filled with growth, and song, and self-fulfillment. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey Center, N.H.

1919

Colonel George A. Irwin, Retired, pens from Box 882, Delray Beach, Fla., that he is now at least semi-retired, and taking life easy, golfing and watching TV shows of our zero-ish 1956 winter. Does it make our mouths water to think of him basking in the sun, he wants to know? Incidentally, George says, his five children now have 14 youngsters of their own. A card from Reginald S. Hunt quotes Frank Craven to us: "No news at all," he says. "The dog is still living, we haven't had horses, the house didn't burn down, and we have no barn." But, Reggy went on to say: "I am making jewelry now, cuff links, and earrings—mostly for the family; and that is the extent of my exercise." His daughter is working away at her third year of pre-medical work at Ohio-Wesleyan and liking it immensely.

Ray Bartlett dropped into Manhattan one day recently from his job at the Stanley Works in New Britain, Conn., and we were sorry to miss his visit. However, he did stop in at the M.I.T. Club here, and Fred Parsons promptly signed him up as a member. Louise Peirce Harwood writes to

tell us that during 1956 she accepted the presidency of the Women's Club in Boston: "An old and honorable institution," she adds. Louise says that she is finding the work exceptionally rewarding, especially her contacts with students from many foreign lands as well as from our own country. It's a full-time occupation, she finds.

Herman "Duke" Herzog informs us that he is still at the "same old stand," and that the leather business is "really tough" at this writing. He thinks there must not be many 19-ers in the Chicago area. "At least," he says, "I see very few at the meetings here." (????) Jack Fleckstein writes from Ionia, Mich., that he saw Joe Conrad out in the Midwest in November and is hoping to see him again in February. Jack's daughter (M.I.T.'53) is a geologist with British-American Oil at Denver, Colo., and likes the work greatly. She and her husband were to spend Christmas with Jack and his wife, and we are sure that a great time was had by all.

Leslie A. Jackson, "Water Boy," Little Rock, Ark., says that everything is the same with him. We trust that this means everything is just as he would have it! George A. Inglis has moved to 2727 Palisade Avenue, New York 63, N. Y., where he is pursuing his career as an architect-engineer. He sends his best to all former classmates wherever they may be. Stuart J. Hayes is still at Norwood, Mass. Stu writes that the latest news in his family is the birth of another grandson. And he boasts that he now has six grandchildren. "Otherwise," he says, "no ripples in our peaceful way."

Edward A. Richardson tells us: "The same job. Getting older so we have moved to the center of the old section of town (Bethlehem, Pa.). Bethlehem Steel has spent some \$300,000 on a beam cambering machine I proposed, and preliminary tests were made in August. We are trying to improve it further. The wife and our son Robert H. (age nine years) are quite well." Captain Edward E. Saunders, CEC (USN), now at 1930 Upshur Street, N.W., Washington, D. C., writes: "Having completed three years of duty in Hawaii, one as 14th Naval District Public Works Officer, and two on the staff of Admiral Felix Stump, I have now reported to the Industrial College of the Armed Forces at Fort L. J. McNair, Washington, D. C., for duty on the staff of that college."

George W. McCreery has resigned as class agent. And George has been succeeded by Donald W. Kitchin. Thanks from the Class, George, for all your efforts, and good luck to you, Don. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N. Y.

1920

Ken Newhall has thoughtfully provided additional information about the death of Grant French. Grant's home was in Valparaiso, Ind., and he had recently been appointed as assistant chief engineer of the Engineering Division of the Pennsylvania Railroad in Chicago. He had been

with the Railroad throughout his entire business career, going with them after a couple of years as an instructor in the Civil Engineering Department at M.I.T. Ken says: "I have lost a good and faithful friend whose remembrance of his four years at Tech was forever near and dear to me." Let's make that statement stand for all of us.

Henry Dooley sends word that Leo Kahn died last October. I have no further details except that Leo lived in Jackson Heights, N. Y. The last time I saw Leo he was accompanist for Hildegard, and exhibited the brilliant musicianship that he was noted for in the old days. The Class thus loses one more of its bright lights.

John Grilli has moved from Chicago to Cleveland, address 15801 Stillwood Avenue. "Bunt" Murphy is now associated with the Herriman School in Monsey, N. Y., according to a Christmas card received from him. We'd like to have news of your latest of a long string of valuable contributions to education, Bunt. An annual event that I always look forward to is the attractive and unusual French Christmas card from "K.B." and Denise White. This year it came over on the S.S. *Liberté* from La Havre. I could wish only that it carried a little news of this distinguished classmate.

A minuscule Class reunion was held New Year's Eve by the Harold Bugbees and the Myron H. Clarks at Steel Hill Inn, Laconia, N. H. Buck and I hoped that your ears were burning while we were talking about all of you. Buck is one of that diminishing number of classmates who looks very little different from the day he graduated. The same cannot be said of your aging and careworn secretary. Please report on your own condition and appearance. I'll promise to publish it in these notes, even if it is a pack of lies. — HAROLD BUGBEE, *Secretary*, 9 Dartmouth Street, Winchester, Mass.

1921

For the many who, at our 35th reunion last June, expressed the intention of meeting with the Class more often, this will serve as an advance reminder of the annual get-together of 1921 men with their wives and families next June 10 at Alumni Day on campus in Cambridge. Although a detailed schedule must await an announcement of the official Alumni Association program, we plan at this date to follow the successful pattern of previous years and meet at luncheon and for cocktails prior to the banquet, as well as sit together for the evening dinner and entertainment. The 1921 program will be published in this column in a forthcoming issue, and last minute notices, if any, will be attached to the roster of those attending, which will be posted in the Rogers Building lobby on the morning of Alumni Day.

Chick Kurth has made a preliminary report on the first group of replies to the December letter from President Ray St. Laurent to all members of the Class. Based on returns from some 95 men, 77 expressed interest in possible attendance at our 40th reunion in 1961, on the 100th

anniversary year of the founding of M.I.T. Interest in the February, 1958, meeting in Havana, Cuba, proposed by Helier Rodriguez, was indicated by 59 and almost the same number of this group plan to attend next June's Alumni Day. If you haven't returned the stamped postal card enclosed with Ray's letter, won't you please fill it in and mail it now? These replies are a tremendous help in planning to meet your wishes. Chick Kurth has done a very considerable job in analyzing and recording results and circulating them to the Class officers. He and Josh Crosby and Joe Kaufman also took charge of arranging a new item on our yearly schedule in the form of an informal 1921 luncheon last January 30, prior to the evening Midwinter Dinner of the Alumni Association. Details of attendance will have to await the next issue of *The Review*.

Ray St. Laurent has been nominated as a member of the Executive Committee of the Alumni Association for the 1957-1959 term, and his name appears on the ballot which you now have. Vice-president of the Rogers Corporation, Rogers, Conn., he has been most active in Technology affairs. In addition to being president of the Class since 1946, and its secretary-treasurer from our graduation to that date, he has been chairman of several reunions, a member of the Alumni Day Luncheon Committee, the M.I.T. Club of Hartford, the M.I.T. Club of New York, and an honorary secretary on the M.I.T. Educational Council. Mark your ballot in the appropriate space and mail it in at once!

John J. Healy, Jr., of St. Louis, Mo., has also been honored. Bearing his holiday greetings came a most welcome letter saying, in part: "I was appointed director of the General Development Department of Monsanto Chemical Company in September. More recently, I have been elected a director of the American Institute of Chemical Engineers for a three-year term, beginning January, 1957. Outside of that, I am in excellent health. Wish I had more news for you. Apparently nobody from 1921 ever visits St. Louis." Congratulations and best wishes, Jack, and many thanks for your fine letter.

Well deserved honors have also been bestowed upon Dr. Augustus B. Kinzel, Vice-president in charge of research of the Union Carbide and Carbon Corporation, New York, and an Alumni Term Member of the M.I.T. Corporation. According to a recent newspaper account sent in by Ray St. Laurent, Gus has been elected president of the American Institute of Mining, Metallurgical and Petroleum Engineers and will take office for the year beginning in February, 1958. He has been actively engaged in research with Union Carbide for more than 30 years. Retired Rear Admiral Andrew I. McKee, Vice-president of the Groton, Conn., Electric Boat Division of General Dynamics Corporation and director of its research and design department, has been awarded the David W. Taylor Medal of the Society of Naval Architects and Marine Engineers.

Through the courtesy of two very kind class secretaries, Obie Denison of 1911 and Harold Bugbee of 1920, we have an illustrated article from the *Boston Globe*

of last December 7, regarding Reg Smithwick, which says, in part: "Dr. Reginald H. Smithwick was honored by friends and associates on his tenth anniversary as surgeon in chief of the Massachusetts Memorial Hospitals. The noted surgeon, who developed an operation for victims of high blood pressure that has been performed more than 3,000 times, was presented a portrait of himself, painted by Boston artist William Draper and donated by former patients, staff members, and friends. Among the speakers was Dr. W. Jason Mixer '02, former chief neurosurgeon at Massachusetts General Hospital and mentor of Dr. Smithwick. The honored guest is also marking his tenth anniversary as professor of surgery at Boston University School of Medicine." Obie sent the clipping to Harold with the notation: "A fine tribute to a fine man. I always admired Reg and his work. Haven't seen much of him lately." Harold sent it to us with the further endorsement: "Obie sent me the enclosed under the impression that Reg was Class of 1920. Certainly he would be a prime asset to any class." Also photographed by the newspapers were Mr. and Mrs. Paul H. Rutherford, on the occasion of their visit to the new Coliseum in New York City, where the National Automobile Show was in progress. Paul is general manager of the Delco Appliance Division of General Motors, Rochester, N. Y.

In January, Squire Ed Farrand (retired), our Class agent, sent you a literary masterpiece, outlining his interpretation of the "modern magic of M.I.T." Everyone who has had an active part in the sponsorship of young high school graduates for places in the freshman class at Technology will tell you of the supreme satisfaction to be derived from seeing these young hopefuls successfully complete the Institute's requirements and establish themselves in the industrial world. That your annual Amity Fund contributions are partly used to aid deserving youths to enter M.I.T. should add to your satisfaction, and should emphasize their enormous value in (a) encouraging boys of promise to pursue scientific and engineering courses; (b) in thus serving the professional needs of our technical and scientific organizations; and (c) in aiding Technology to serve both youth and industry. All of which is by way of reminding you to give now and give generously to the Amity Fund. Many thanks if you have already answered Ed's letter.

If you attended last Alumni Day, you will recall that Dug and Betty Jackson brought Dug's mother, Mrs. Dugald C. Jackson, widow of the former head of the Department of Electrical Engineering at the Institute. Thanks to Ednah Blanchard of that Department, we were able to send greetings from the Class of 1921 to Mrs. Jackson on her 90th birthday, February 8, and to wish her a long continuance of her active life and the enjoyment of her fine large family. Dug and Betty sent their usual attractive holiday greetings with invitations to their winter home near Havre de Grace, Md., and their beautiful summer place on Sunset Point, Yarmouth, Maine. One of the many bright spots in serving the Class secretaryship is the re-

ceipt of so many friendly holiday greetings. Maxine joins us in thanks to Jack and Elizabeth Barriger, Ethel Burckett, Phil and Edna Coffin, the Everett Farmers '23, Harry and Catherine Field, Sumner and Betty Hayward, Jack Healy, Dug and Betty Jackson, Jack and Marge Kendall, Pat and Pete Korn '56, Marjorie and Jack Kriz '41, Ione and Warren Kunz '34, Chick Kurth, Moose LeFevre, Milicent and Joe Maxfield '10, Bob and Helen Miller, Regina and Gus Munning '22, Graciela and Helier Rodríguez, Helen and Ray St. Laurent, Madeline and Rufe Shaw, Gretchen and Paul Smith '51, Lem Tremaine '23, Louise and Carlton Tucker '18, the John Warrens '46.

The greetings from Helier and Graciela Rodríguez had a note that Cuban Alumni are enthusiastic about the "M.I.T. Weekend in Havana" last month and are looking forward to our proposed 1921 reunion there in February, 1958. Jack Kendall writes: "Sorry I missed the reunion by two weeks. Had a few days with Bob at M.I.T. in the last week of June. Saw Fritz Ferdinand; talked to Ray St. Laurent and Warrie Norton on the phone. I'm busy doing committee work on the Tournament of Roses Parade for New Year's Day." The Kendalls celebrated their 30th wedding anniversary last March; a daughter, Susan McCutcheon, arrived in June at the home of Jack and Mrs. Kendall, Jr., and their little son, Scott. Bob Kendall went to France last August on a fellowship with the French Petroleum Institute and then toured Europe. His research work is finished and he expects to receive his doctorate in Course X from M.I.T. Phil Coffin reports a total of six grandchildren. Daughter Dorothy lives in Hawaii, so Phil and Edna plan to fly there next month, taking daughter Pat. (The Fields and Wirts of Honolulu please take notice.) Bob and Helen Miller's greetings include the usual superb photograph of their good-looking family, Peggy, Bobbie, Betty, Jo, Kathleen, Jeanie; the adjective goes for Mom and Dad, too! Rufe Shaw says he wrote a digest for the Timbie book. Betty and Sumner Hayward had a delightful reception at their home, at which Maxine and your Secretary discovered that our son, Alfred, was a buddy at Ft. Holabird of Bob Gruehr, son of Mr. and Mrs. Anatole Gruehr '24.

Norwood P. Johnston, petroleum engineer and a director of the Cumberland Petroleum Company of Marietta, Ohio, has a new home, Cotton Cottage, Pinehurst, N. C. Ivan C. Lawrence, former executive of Minnesota Mining and Manufacturing Company, who has retired, reports his new home address as Twin Shores, Longboat Key, Sarasota, Fla. Ernest Pauli, Head of the Ernest Pauli Associates of Newark, N. J., says he is now making his home at 541 Pelham Road, New Rochelle, N. Y.

Dr. Walter J. Hamburger, Director and Treasurer of Fabric Research Laboratories, Inc., Dedham, Mass., spoke on the accomplishments and developments in the textile science since 1944 at the December Textile Technology seminar, sponsored by the Institute's Textile Division. Philip T. Coffin of the Aluminum Company of America is a co-author of a paper

entitled "Colorado High Altitude Corona Tests of Conductors, Towers and Footings," presented to the transmission and distribution session of the midwinter general meeting of the American Institute of Electrical Engineers in New York City last January.

It is with deepest sorrow that we record the death on October 27, 1956, of James Herbert Dodge of Dover, N. H., and extend to his family sincerest sympathy on behalf of the Class. Born December 5, 1894, at Concord, N. H., he attended Concord High School and was graduated from Dartmouth in 1917. He was graduated with us in Course I and entered the teaching profession. He had taught mathematics and science at the Stearns School, Mt. Vernon, N. H., and was assistant principal of Dover High School, Dover, N. H., at the time of his death.

Continuing our serially published list of "Who's Who" at last June's 35th reunion, Willard A. Emery, President of the Southwest Metal Finishing Company of Tulsa, Okla., is engaged in all types of plating and finishing of metal surfaces. Sons Willard, M.I.T. '50, and Robert, Tulsa University, are officers in the firm. Daughter Audrey attended Larson College, New Haven. The Emerys have five grandchildren. Ralph E. Ferdinand is President and General Manager of the Joslin Showcase and Fixture Company, Cambridge, Mass. Son Paul was graduated from Boston University in 1953, and Warren is attending Harvard. Benjamin Fisher is secretary and assistant treasurer of the Kendall Company, textile specialists of Walpole, Mass. The Fishers have two young sons and a daughter. Hartwell Flemming is general engineer of the New England Gas and Electric Services Corporation of the New England Gas and Electric System, Cambridge, Mass. John M. Giles is an independent oil producer of San Angelo, Texas, and vice-president of Klauder Weldon Giles Machine Company, Philadelphia dyeing machinery manufacturers. Daughter Linn is nine years old. Ralph H. Gilbert '19 is an engineer with the New York Telephone Company, New York City.

Luther Goff is assistant director of sales promotion for Brown and Sharpe Manufacturing Company, Providence, R. I. He and Mrs. Goff have three sons, two daughters, and three grandchildren. George F. Gokey, Jr., is general manager of Abrahamson-Bigelow Company, Jamestown, N. Y. He is married and has no children. Harry A. Goodman has his own firm in Boston, engaged in estate planning, advising on wills, trusts, taxation, and insurance. He and Mrs. Goodman have two daughters and two grandchildren. C. Doane Greene has retired from the M. W. Kellogg Company and now makes his home at Decoy Farm, Rock Hall, Md. Daughter Joan, who attended the University of Vermont, is married and has a son. Son Stephen was graduated from Lafayette. Mark V. Hamburger is a consultant to retail stores, and now makes his home in Lynn, Mass. He is married and has no children. Paul L. Hanson has retired from the presidency of Kold-Draft Northwest, Inc. He and Mrs. Hanson make their home in Minneapolis, Minn.

Son Paul, Jr., received his A.B. from Denison University in 1950 and his M.A. from the University of Chicago.

Mahlon A. Hartley, of that first VI-A group, is general manager of M. A. Hartley and Company, electrical and radio suppliers of Staunton, Va. Richard was graduated from Washington and Lee, and Margaret is in grade school. Robert W. Haskel is director of engineering of Standard Chemicals, Inc., Natick, Mass. Roberta attended Chamberlain and the New England Conservatory of Music. Donald is in high school. Joseph G. Hauber is chief mechanical estimating engineer, Ebasco Services, New York City. Munroe C. Hawes is treasurer, Hawes and McAfee, Inc., real estate and insurance firm of Manasquan, N. J. Aimee attended William and Mary; Munroe, Jr., Yale; Elizabeth, Emerson; Sandra, Southern College; George is in junior high school. Munnice and Alex have three grandchildren.

Sumner Hayward is engineer of Outside Plant and Transmission, New York Telephone Company, Brooklyn, N. Y., and lives in Ridgewood, N. J. He and Betty have a son and daughter. John J. Healy, Jr., is the newly-appointed director of the General Development Department of Monsanto Chemical Company, St. Louis, Mo. He is married and has no children. LeRoy M. Hersum heads his own consulting engineering office in Boston, specializing in the design of bridges, buildings and foundations. He and Mrs. Hersum have two daughters. Lois was graduated from Radcliffe in 1953, and Cynthia attends Buckingham School. Sanford J. Hill is a member of the Legal Department of E. I. duPont de Nemours and Company, Wilmington, Del. Daughter Margaret was graduated from Wellesley in 1955.

Spring is sprung, the grass is riz; I wonder where your letters is! — CAROLE A. CLARKE, Secretary, Federal Telephone and Radio Company, 100 Kingsland Road, Clifton, N. J.

1922

By the time you receive this issue of The Review, the initial material about the 35th Reunion will have been sent to all members of the Class. The various committees are at work to ensure a successful and well-run Reunion. Get your reservations in early and don't forget the dates; Friday, Saturday and Sunday, June 7, 8 and 9, at the Sheldon House, Pine Orchard, Conn.

From mid-December to mid-January when this is being written not a word was received about the doings of any of our classmates, hence the brevity of this column. Hope to be more productive next month. — C. YARDLEY CHITTICK, Secretary, 41 Tremont Street, Boston, Mass. WHITWORTH FERGUSON, Assistant Secretary, 333 Ellicott Street, Buffalo, N. Y.

1923

The Wall Street Journal of December 5 carried the following: "Miles Pennybacker, owner of Voltarc Tubes, Inc., of Norwalk, Conn., is bringing out two new products in the next few months. One

promises cheaper fluorescent light fixtures; the other makes for more uniform brightness in neon signs. Both devices were developed in Voltarc's research department, a fully-staffed laboratory with a budget of its own and a planned research program. Three years ago, Voltarc had no such facility. Its total expenditure for product development came to about \$10,000 a year. Today, the outlay for research nudges \$50,000 annually. That's not a remarkable amount if you compare it with the sums spent on research by such corporate giants as Du Pont and Union Carbide. But for a company of Voltarc's size a \$50,000 outlay is no small expenditure. Voltarc's sales run around \$1,000,000 a year; it has a staff of 70 employees." That's our boy, Miles, the *Journal* wrote about! Congratulations! By the time you read these notes, Miles will have given a talk before the West Coast General Management Conference of the American Management Association scheduled at Los Angeles for January 31, 1957. His subject: "Smaller Size: Competitive Hindrance or Help?" He favors the advantages — and so does your scribe!

Many Class members were listed in the flyer, "M.I.T. Alumni Makes News," including Eger V. Murphree, V, Special Assistant to the Secretary of Defense and in charge of the guided missile program; Bernard E. Proctor, VII, recipient of the Nicholas Appert Medal of the Institute of Food Technologists; Benjamin Cooper, XV, as "America's No. 1 Highway Sleuth," and inventor and manufacturer of practically all toll collection equipment; Albert S. Redway, XV, elected president of Rockbestos Products Corporation of New Haven; and Dr. Manuel S. Vallarta (Class of '21), as sub-secretary of education in Mexico. Many others made the headlines in their local papers and deserve great credit. Congratulations to all of you. We ordinary citizens are proud of you.

President Jack Zimmerman reports the marriage of John J. Murphy, XV, in Frankfurt, Germany, on Thanksgiving Day, to Mrs. Helen Hurley Dunphy of Belmont, Mass. It appears that John spends about half his time traveling back and forth to Europe for Union Carbide and Carbon Corporation as head of the Patent Department and vice-president of the Development Division. Mrs. Hurley was visiting her daughter whose Army husband was stationed in the Frankfurt area. The couple have been friends since early childhood in Boston. Best wishes of the Class go to them and also to Phil and Betty Coleman whose marriage was reported in the January news. It's a small world! Phil married the daughter of an old friend of mine.

John E. Burchard, IV, Dean of School of Humanities and Social Studies, is scheduled to be the principal speaker at the dinner of the Westchester Chapter of the M.I.T. Club of New York to be held at the Scarsdale Country Club on January 17. He follows Al Perlman who spoke before the same group on November 8. Your scribe was the principal speaker at the dinner honoring Mayor Michaelian of White Plains, who was the recipient of the Jaycees Award for outstanding con-

tributions to the community. — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 N. Broadway, White Plains, N. Y. WENTWORTH T. HOWLAND, *Assistant Secretary*, 1771 Washington Street, Auburndale 66, Mass.

1924

As these notes are written the weather man is regaling us with the word that parts of New England right now are colder than Greenland. The sun is making no impression at all on the blanket of snow in the Great Court. Professor Willett is no doubt sitting smugly in his office in Building 24, rubbing his hands as he sees his prediction for "the worst winter in many years" come true.

In this sort of atmosphere we look with longing at Nish Cornish's letter, just arrived, plugging the 9th Annual Fiesta in Mexico City, "when our spring flowers are in profusion, a pleasant change from the rigors of winter back home." It's too late now to take in the February week end in Havana, but you can still make this Mexico deal if you hurry. March 14 to 16, and you'll want to stay longer, you can be sure. Details from the M.I.T. Club of Mexico City, Jesus Teran #24, Mexico 1, D.F. — or telefonos 10-07-83 and 35-18-75.

A very splendid collection of Christmas cards lie before me, and there certainly is variety. Everything from Santa on a surfboard from the Henningers, with the cryptic greeting "Mele Kali Kima Ka" inside, to a pair of deer in a birch forest (no doubt in Genesee State Park), from the Gordon Harveys. The Schoolers' card enclosed an item of moment about their son Jerry, known to many of you. "Mr. and Mrs. Jesse Nankin announce the engagement of their daughter, Eileen Sue, to Lieutenant Jerome Philip Schooler, U.S.A.F." Ed Wininger's patented St. Nicholson was looking in awe at an organ-pipe row of silos (Nicholson-built) towering into the clouds. Bill Robinson's card showed the two youngest offspring, Billy a bit grown up since our 30th reunion, waving out the window at their father, home for the holidays from General Electric's Management Course. This course with a familiar address, Ossining, N. Y., is one of the pioneer Executive Development courses run by industry, and it's no mean honor to be chosen for it. Not all the young Cardinals made their card this year. Just three of them, along with their mother Lorene, who looks as young and carefree as they do. George Knight didn't get in his picture, but his boat and wife, Margarete, did. On closer inspection there is a spare torso and legs in the stern. Could be George. The Russ Ambachs have recently experienced a change of life. They succumbed to TV. "Seems like we moved into another world." The DiSommas were evidently planning to go to Havana for the big week end. Maybe we'll have a report later. Mike Amezaga and Tony Rosado are both on the committee. Mike's card, a couple of very athletic Spanish dancers, was written on board the S.S. *Liberté*. He was just getting back from a couple of months in Spain. Nish Cornish and Jack Nevin re-

strained themselves from plugging the Mexican Fiesta. Among other happenings last year Jack learned what it's like to be the father of the bride, and a very charming bride Ann was. However, she couldn't have looked any prettier than the last time we saw her in Mexico City dressed in native costume. Two California cards were something of a contrast: Rock Hereford's was a snow-covered mountain scene; Phil Bates's showed the sun-drenched sandy shore of Lake Tahoe. There are two Bates boys at M.I.T. now. Charles, a graduate student in Food Technology, goes to work for Procter and Gamble shortly. Bradford, a budding electronics engineer, is a sophomore. And here's a quote from a bunch of ex-dyed-in-the-wool New Englanders: "Double everything (about California) and believe that — then you know not the half." It's still hovering around the zero mark here in Cambridge. Your secretary is almost ready to believe even that one at the moment.

Late last year the Edward S. Taylors moved into their new home in Lincoln, Mass. People do this all the time. What made this one different? Architect for the job was Ed's brother, C. Fayette Taylor. Both are senior members of the M.I.T. Faculty. Ed is professor of aircraft engines; his brother, professor of automotive engineering!

On a slippery, snowy day recently we had a call from Jack Hennessy, sitting out the storm in Boston's Harvard Club. Seemed a bit peculiar, but Jack claimed he was attending an M.I.T. Visiting Committee (Mechanical Engineering) meeting at the moment. There is a busy man. He was elected to the Board of Trustees of Iowa College last November. He was on the Building Industry Committee for the Greater New York Fund last fall. A news photograph of the opening dinner where he sat beside Mayor Wagner gave pause. There was Jack in the right front, full face; directly above, another Jack, this one in profile. A very lifelike photomural, and much better photography than is usually seen in front-and-profile combinations.

We've also mentioned some of Ed Hanley's widely varied interests in the past. Now it's banking. A *Times* story is headed: "Steel Man Joins Board of Mellon National Bank." Ed, as you know, has been president of Allegheny Ludlum Steel for the past six years, and is also an Alumni Term Member of the M.I.T. Corporation. We mentioned the wintery aspect of Rock Hereford's card. Rock, another steel man, is manager of employee publications for U. S. Steel's Columbia-Geneva Division in the West. The December issue of his house organ, *U.S.S. Westerners*, has just arrived — a very splendid job of work — with his Christmas card photo on the cover. He really liked that one, and with cause.

We caught up with Walter Bagby's change of address. He has been plant superintendent of Carbide and Carbon's plant in Whiting, Ind. Now he's gone to New York as associate director of their Industrial Relations Department. "From production line to staff work." Sorry to have to report another gap in our ranks.

William G. deKoch died more than two years ago, but we just heard of it. A Harvard graduate, he was a special student with us. For many years Mr. deKoch had been a petroleum consultant in Los Angeles.

News of the Cardinal family: the oldest daughter, whose burned-out house was reported a year ago, is back home again with her husband and four children; Paul, Jr., is in the Army on one of those six months-plus deals; John, who graduated from M.I.T. last June, is with Olin Mathieson in New Haven. So is Frank O'Neil's son, Frank, another M.I.T. Alumnus. Griffin Crafts, he of the moustaches, has recently gone through something that sounds just as bad as its name, a ventriculography. All has to do with a rather rugged examination of the brain. Fortunately, the examination proved he was in good shape, and he's now back on the job.

S. Floyd Stewart, Bill Robinson's successor as president of the M.I.T. Club of Cleveland, has made a switch. He has been assistant to the President of Jack and Heinz. Now, according to Bill, he has become a BIG little business man. Bill neglected to say what the business is, but our own private detective agency says it's Electric Motors Development.

While we're recounting social and family notes, might as well record that on February 9, Mr. and Mrs. H. B. Kane flew (weather permitting — this is written before the fact) to Kansas City for the marriage of their son, David, and Miss Norma Wohlgenuth. It will be much easier writing to the gal now. David, a member of Uncle Sam's armed forces, still has a long term ahead of him, but love laughs at little things like that. — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

1925

It would be nice if more of the Class of 1925 followed up as did Don Taber when he read that the Secretary was starving for news. Part of Don's message included a photograph of a very nice-looking young lady with the caption: "Cadets' Choice at U. of M." Unfortunately, the photograph cannot be passed on to you, but the information which went with the picture read as follows: "The annual military ball of the R.O.T.C. at the University of Massachusetts was held last night in Curry Hicks gym with the high light of the evening coming at 10:30 when the new honorary cadet colonel was announced. Lovely Miss Martha Trask, 18, of Medford, was presented the 'cape and eagles,' and will reign over all military events at the university. Miss Trask is the daughter of Colonel and Mrs. Henry C. Trask, and is an arts and science major of the class of 1960." Don's own news, in his words, "a little skimpy," is quite important. He states that his chest has expanded a couple of inches due to the fact that his oldest daughter recently presented him with a grandson to match the granddaughter she had a year and a half ago. As to his work, Don says: "The American Pad and Paper Company is continuing to show a good healthy growth,

and we have just completed plans for a completely new factory here in Holyoke. We expect the contractors to have their estimates ready about the first of the year, and, unless building costs have gone completely out of sight, we shall start construction as soon as the weather permits."

All of you should realize that Ben Groenewold is playing a very important part in connection with the Alumni Association Regional Meeting taking place at Tulsa, Okla., on February 2, 1957. I understand that Ben is serving as one of the co-chairmen for this event, and it promises to be one of the greatest of the Regional Meetings yet presented by M.I.T. Alumni. The approximately 175 Alumni in Oklahoma expect to turn out 400 to 500 people for this meeting. The Mayor of Tulsa will give the speech of welcome; the Governor of Oklahoma will participate in the meeting; and three separate daytime sessions will be presided over by the Presidents of the University of Oklahoma, Oklahoma Agricultural and Mechanical College, and Tulsa University. The Governor has already proclaimed February 2, 1957, as M.I.T. Day in Oklahoma.

The address changes which come through monthly indicate that Charles W. Allen, who has been in West Concord, Mass., for a number of years, is now residing at 702 N. Lakeside, Lake Worth, Fla.; and Harry C. Karcher has left San Diego, Calif., and can now be reached at Apartment 406, 3710 N. Meridian, Indianapolis, Ind. — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

This month we do not have to fill space with yarns from Pigeon Cove. The return post cards have been coming back so fast that the problem now is how to squeeze everything in between now and the July issue. Many classmates have also written long letters, and one sent his most recent book. With this sudden "strike" of Class notes material, we find throughout requests to continue the Pigeon Cove theme, so we will at least keep it in the background. It has been a real old-fashioned winter in New England (and as we write it's only mid-January) and the fire of wild cherry wood in the fireplace has not always been able to neutralize the sound effects outside. We have witnessed our first Northeast blizzard from our snug little hide-out on the cliff. We found that when power lines succumb at 2:00 A.M., it shuts off electric blankets, oil burner, hot water heater, and cook stove. Cherry wood is a poor substitute for electricity! However, it is exciting to see one of these winter storms from the front row, and when it clears the sea seems to sparkle more than ever, but let's get on with the returns.

The first reply was a long letter — strangely enough from Bill Graves whose office is in the same block as ours here in Boston, but our paths seldom cross. We quote Bill: "On December 5, Doc Foster '25 called from Tech and said that classmate Art Johnson was in town and to come to the Faculty Club for lunch, where I was promptly taken over the coals by Art for

missing our 30th reunion. Bill Forester and I were registered, but, as you have already reported, Willie Forrester was side tracked in the hospital, and his playmate, the other 'Willie,' was in Billings, Mont., finding oil wells, and didn't get back East again until June 19, so Course III was represented only by Bird, Austin Kelly and Art. Art, still a bachelor, is now with Olin Mathieson Chemical Corporation building a \$120,000,000 aluminum plant on the Ohio River. Before starting this latest project, Art travelled completely around the world studying aluminum plants in every country where they make the metal.

"To specifically reply to your post card, I am still with the United States Smelting, Refining and Mining Company (26th year), but since the company branched out into the oil business, I have been entirely out of mining exploration, and am now concentrating on petroleum and natural gas with headquarters at 75 Federal Street, Boston. I am married (22 years), and have one son, age 20, a specialist 3rd class with the U. S. Army in Frankfurt, Germany. Cheerio!"

Now let's look at a card or two and save the letters for next time. George Lamb's card, we regret to say, was returned by his wife, Margaret, who advised of George's death last September. Elton Staples reports that he and his wife just returned from visiting seven European countries where he was impressed by the large differential between the worker's take-home pay and that of management's, but business was booming nonetheless, and Elton reports that a tremendous potential exists for all types of consumer products. We hope some day to have an opportunity to see some of the 400 slides Elton took on this trip. Elton, as you know, is located in Milwaukee as executive vice-president of Hevi Duty Electric Company.

A fascinating Christmas card from Dave Harrison unfolded in five sections and told the story of Dave's family in photographs. Dave, his wife, and daughter Virginia Sue are living in Birmingham, Mich. Daughters Delia Anne and Sarah May are freshmen at Wittenberg College, Springfield, Ohio, and the other two photos are of Lee Olive, senior nursing student at Flower and Fifth Avenue Hospital, New York City, and Betty Jane, a clothes designer in New York. We have long heard about Dave's fine family of five girls, and this Christmas Card report was a nice introduction. Ruth just brought my mid-morning coffee with a piece of Christmas fruit cake, so there will be no need for "time out." Such efficiency is paralleled in our office when each morning a young lady from Schrafft's opens the office door with the salute, "coffee time," but let's get on, as Heidi is anxious for her master to take her for a Sunday morning hike.

A card from good old Art Brockelman brings him up to date. Since Brockelman Brothers markets sold out to the Stop and Shop chain in 1953, Art has occupied himself relaxing, fixing up the house, selling securities, and finally has gone into the plastics business in Leominster, Mass., and reports that he is now really enjoying life. (I can't remember when he did not.) Bill

Walworth, in a note from Lansing, Mich., tells us that he became a grandfather via his oldest son a year ago, and that his other son hopes to enter M.I.T. in 1958.

George Edmonds, knowing that your secretary has to walk by his door when in Wilmington, writes: "Drop in and get the news first hand," so we will. Bruce Humphreys reports that "Deke" Taylor was elected president of the Chicago M.I.T. Club last June, and has been doing an excellent job on the Club program this year. Dan McGrew is now Major General McGrew, U.S.A.R. Congratulations, Dan! There is no point in using up the entire backlog the first month, so we will quote from Bill Latham's note and call it a day. Bill, as you know, is resident engineer for the Port of New York Power Authority. "Here is a little note to bring you up to date on Jim Drain. I ran into Jim at the ground breaking on the St. Lawrence in August '54, and have heard of him off and on since then from some of Joy's peddlers, who have been pretty active around here. I am spending half my time at Niagara Falls now, getting set for the project up there to start as soon as we get our Federal license. At least on that job we won't be confused with the Seaway as we are here in Massena." The clipping about Jim Drain tells that he has been made vice-president and general manager of the Mining and Construction Division of Joy Manufacturing Company, Pittsburgh, Pa. Jim previously was president of Joy Manufacturing Company of Canada. Congratulations, Jim! We received one very unusual reply to our request for news — a classmate's wife sent a fine report of their family, and we will start the April notes with this letter from Mrs. Jim Suydam of Montgomery, Ala. — GEORGE WARREN SMITH, Secretary, E. I. du Pont de Nemours and Company, Elastomers Department, 140 Federal Street, Boston 10, Mass.

1927

In the last notes I told of bumping into George Chatfield and inferentially put him in the Class of 1927. I find that he is not only very much in the Class of 1928, but secretary of that organization. Les Woolfenden has been promoted to the position of plan manager of General Aniline and Film Corporation's Acetylene Chemicals Plant at Calvert City, Ky. He has been with General Aniline since 1929. Paul L. Sackett joined the York Corporation in 1927, and was named Boston area branch manager for the Industrial Division late last year. Home address: 123 Lincoln Street, Melrose, Mass.

W. Hart Nichols has been elected to Northeastern University's Corporation, President Carl S. Ell announced early in December. Nichols is vice-president, treasurer and director of the W. H. Nichols Company, Waltham; a director of the Newton-Waltham Bank and Trust Company; Middlesex and Boston Street Railway; and a trustee of the Waltham Savings Bank. Abe Mankowich reports that he is "... still a career Government employee (research chemist) of almost 27 years' service, counting three years active duty in the Army during World War II." We regret to record the death of his wife

in December 1956. His son Paul has entered the U.S. Naval Academy after graduation from Bel Air Maryland High School where he won three varsity letters, was captain of the Maryland High School team, and set new Maryland High School records for shot-put and discus throw. At the Naval Academy he played freshman football and made the Superintendent's scholarship list.

Stone and Webster Engineering Corporation has promoted Art Connell to vice-president. He will continue his work in the petroleum and petro-chemical fields. Bob Wallace, previously chief engineer of Diamond T Motor Car Company, has been elected vice-president in charge of engineering. Bob has been very active in the Society of Automotive Engineers truck and bus activities in recent years. In a recent "M.I.T. Alumni Make News," two members of our Class were singled out for having been made presidents of their companies: Louis F. Eaton, Brockton, Mass., Edison Company, and Thomas A. Knowles, Goodyear Aircraft Corporation in Akron, Ohio. — J. S. HARRIS, Secretary, Shell Oil Company, 50 W. 50th Street, New York 20, N.Y.

1928

Maurice Beren has been kind enough to write your Assistant Secretary as follows: "Dear Walter: It was nice to hear from you, and the next time I drive by the Arthur D. Little Laboratories, I will come in to see you. I am presently vice-president of the Pyrotex Leather Company in Leominster. I have been with this company 26 years. We manufacture coated fabrics, paper, and braid. Our principal product at the present time is coated braid, which is used mostly in the field of hobbies and crafts.

"I have one daughter, Jean, who is a junior at Simmons College. I believe she is quite partial to M.I.T., although occasionally I have caught her saying a friendly word about Harvard. I undertook to design and build a house a couple of years ago, and I assumed that if one has a chemical engineering degree, one needs no more architectural and building experience than can be picked up from a few chapters of the old 'Fuller and Johnston, Volume II.' I did get a good building construction education, but I believe it would have been cheaper if I had taken off three or four years and taken the regular architectural engineering course at M.I.T. My advice for all chemical engineers is to hire an architect.

"I see Sid Brown quite frequently. He is vice-president of Rogers Paper Company in Manchester, Conn., and he is well and happy. Please remember me to any of our '28 classmates you happen to meet. Sincerely, Maurice Beren."

Indirectly, we have heard also from Gilbert Toone. Gil is still with National Aniline Division of Allied Chemical and Dye Corporation. At present he is manager of the Buffalo, N.Y., laboratory. Until recently he held this position at the Port Chester, N.Y., laboratory of the same company. Our reporter says Gil is in good health, good spirits, and appears to be doing very well.

We regret to record the death, on April 18, 1956, of our classmate, Romeo E. Bossi, who graduated in Course IV-A. All of his professional career had been devoted to the construction business — mostly public buildings. From 1946 on, Romeo Bossi had his own company operating in the Boston area. — GEORGE I. CHATFIELD, Secretary, 49 Eton Road, Larchmont, N.Y. WALTER J. SMITH, Assistant Secretary, 15 Acorn Park, Cambridge, Mass.

1931

The December National Lubricating Grease Institute spokesman told of Jack Lane's election to the presidency of that organization for 1957. Jack — who is manager of Socony Mobil Oil Company's Automotive Division — has been active in several professional societies, as well as a staunch supporter of our Class activities. He is among the few, I believe, who have attended every reunion. At the 25th, he was joined by his charming wife, Bert, whom many will remember from our undergraduate days. Several months ago, Bill Jacobs, Claude Machen, Gordon Speedie, and I spent an interesting hour or so discussing "emotronics," Gordon's coined word to describe his ideas on the application of scientific principles to human relations. The idea has received considerable publicity and certainly presents a novel and original viewpoint.

New addresses received for our classmates on the move include: John W. Carleton, 100 Beacon Street, Boston 16, Mass.; Gerard E. Claussen, Beech Spring Garden Apts. (22-L), 851 Springfield Avenue, Summit, N.J.; Charles W. Martel, 15 Hillcrest Road, Reading, Mass.; Captain James H. Rodgers, Naval Research Branch Office, 1000 Geary Street, San Francisco, Calif.; Clifford C. Walker, 11-08-143rd Place, Malba, N.Y.; and A. Harry Wagner, 4901 New Kent Road, Richmond 25, Va. Harry writes that he has built a new home but is still maintaining the same connection — vice-president and general manager of Southern Brick Contractors, Inc.

It was with sincere regret that we learned of Brigadier General Thomas K. Vincent's (U.S. Army, retired) death last September. General Vincent died suddenly of a heart attack, two years after his retirement. — EDWIN S. WORDEN, Secretary, 9 Murvon Court, Westport, Conn.

1932

There has certainly been much time and thought put into our 25th Reunion by the Reunion Committee. By the time you read this, probably formal notices of the Reunion plans will have been received, and your secretary hopes to see many of you there. Towards the end of November a Class dinner was held at the M.I.T. Faculty Club, with 29 members of our Class in the Boston area attending. Plans for the Reunion were discussed, and Professor Thompson spoke on the Nuclear Reactor Program at M.I.T.

Frank Cook's venture in the aeronautical and electronic equipment field is moving along well. A press release just received describes the award of a contract

to him by the National Bureau of Standards in Boulder, Colo., for 60 very high frequency radio receivers to be used by the Bureau in its research in the expanding field of "scatter" propagation of high frequency radio waves. Frank's company, only 17 months old, is already a prime contractor to the United States Air Force and the United States Navy, and a subcontractor to the Glenn L. Martin Company, Sandia Corporation, Sperry Gyroscope Corporation, Beech Aircraft Company, and the Raytheon Manufacturing Company.

A card has been received from Don McSheehy, who is a civilian evaluation officer of Technical Training Air Force at the Air Proving Ground Command, Ft. Walton Beach, Fla. The T.T.A.F. Liaison Office evaluates all types of formal training on the basis of job suitability. Don writes that he finds his work interesting, and that it involves a lot of travel to find suitable test environments. Don acquired two children when he married and has added three since.

Larry Hubbard is now employed by the Government as construction superintendent for the U.S. Navy. He is living at 22 Kenwood Road, Wethersfield, Conn. Francis Pestridge is in Christian education, living at 105 Edgecombe Avenue, New York 30. He writes: "Glad to hear from you; it really warms my heart to hear from anybody connected with M.I.T., which has always been my first love. My deep regret is that circumstances did not allow me to get a degree."

Stan Szymczyk is now assistant distribution engineer for the Chicopee Electric Light Company. His address is: 22 Henshaw Street, Chicopee Falls, Mass. — ROBERT B. SEMPLE, *Secretary*, Box 111, Wyandotte, Mich. *Assistant Secretaries*: WILLIAM H. BARKER, 45 Meredith Drive, Cranston, R.I. ROLF ELIASSEN, Room 1-138, M.I.T., Cambridge 39, Mass.

1933

Your secretaries were proud to see three members of the Class prominently mentioned in the recent issue of "M.I.T. Alumni Make News." Robert H. Winters, Canada's Minister of Public Works, Pierre S. du Pont, III, and Richard S. Morse. Bob's picture appeared on the cover of *Engineering Digest* recently; Pete has recently been appointed chairman of the committee for the proposed American Museum of Immigration; and Dick is head of the National Research Corporation which has been awarded one of the three Atomic Energy Commission zirconium contracts. Dayt Clewell, on whom we reported two months ago for his promotion to the managership of the Research Department of Socony Mobil, is now living in Darien, Conn.

We had word recently from Vernon O. Bowles who has recently become assistant manager in charge of development engineering for Socony Mobil, and who is now living in Rye, N.Y., with his wife and three children. We were much interested to learn from a Christmas card that Gene Cary is still happily located in Steamboat Springs, Colo. Gene's older boy gets out of the Army next fall and has two more

years to complete his college program. Their younger boy will be valedictorian of his class and expects to enter the University of Colorado next fall to study nuclear physics. He hopes to transfer to either M.I.T. or California Institute of Technology to complete his work. With justifiable pride, the report concludes with the comment that both boys are six foot five inches tall and very handsome.

Charlie Bell provides a fantastic tale of how to retire and become busier. In the early fall, Charlie resigned as vice-president in charge of research for Universal Winding Company in Providence to assume the presidency of three family businesses. One of these is Bell Haven Park, a motel and mobile home park in Miami, covering 30 acres of ground with 350 completely equipped trailer spaces and 21 motel units. This represents a small city of about 1,000 people with all the problems of a city. The other two companies have to do with real estate and industrial development center management, located in Garwood, N.J. Not satisfied with these responsibilities, Charlie pursues his real love of mechanical research by serving part time as a technical consultant, and in his spare time promotes some of the inventions which he has worked out. Oh yes, Charlie has three girls and a boy. We are sure that Charlie would welcome all of you as paying guests at Bell Haven Park in Miami.

Bill Pleasants, who lives in Wynnewood, Pa., is manager of Service Station Operations for the Atlantic Refining Company, concerning himself with the design, construction, maintenance, and all other housekeeping problems associated with service stations — in fact everything except the actual selling of the products. He has the responsibility for 21 locations situated in five states on the Eastern seaboard. Bill's oldest daughter enters college this fall while their second daughter enters high school. We are indebted to Jim Vicary for an up-to-date account of his activities. Jim is president of the Ervite Corporation, manufacturers of porcelain enameled ware, president of the Ervale Corporation, a sales unit for their porcelain products, and treasurer of the Erveen Corporation which does architectural and engineering work associated with the porcelain enameled business. Jim is also president of the Porcelain Enamel Institute, a trade association of some 150 companies throughout the world. Jim's son, Chuck, is a junior at the Institute in Course XV. His other two youngsters are a senior and sophomore respectively in the local high school in Erie, Pa.

Finally, we are happy to relay a report we received from Bob Swain, who has become secretary, treasurer and a member of the Board of Directors of the Murray Space Shoe Corporation with headquarters in Bridgeport, Conn. Bob was formally associated with Trans World Airlines, where he had been since graduation. Bob promises that we will all hear about Murray Space Shoes in the near future. We wish him the best of luck in his new assignment. — GEORGE HENNING, *Secretary*, 330 Belmont Avenue, Brooklyn 7, N.Y. R. M. KIMBALL, *Assistant Secretary*, Room 3-234, M.I.T., Cambridge, Mass.

1934

As this is written we are struggling through sub-zero weather. Our communication pipe lines outside the Boston area may have been frozen, since all the news is local. By way of a progress report, the Class Compton Scholarship Fund is getting on in an encouraging way. As of the first of the year, the Institute had received contributions to this fund totalling \$7,949 from 132 contributors as against \$6,230 from 109 contributors for the previous year. This is a long way from \$100,000, but Hank Backenstoss and his captains have been meeting regularly and working toward increasing both the number of contributors and the size of the individual contributions.

Hank Backenstoss reports that Ed Chiswell (Course X) was in Boston the first part of December for a meeting of the American Institute of Chemical Engineers. He is a member of the Council of that organization. Ed brought his wife Hester along (other husbands please note), thus giving her the opportunity to visit with their daughter Helen, who is a junior at Smith. Their son Edgar, 3d, is not yet ready for college. The Chiswells live in Belvedere, Calif., near San Francisco. Ed is now manager of Process Research and Engineering for California Research Corporation, a subsidiary of Standard Oil of California.

Les Doten, our Class treasurer, was also recently made treasurer of James O. Welch Company of Cambridge. He had been comptroller previously. John Burwell has joined American Standard Company as director of research. If this extends to bathroom fixtures, it would be fascinating to hear from John about it. Once again a plea for your help in providing material for this column. Certainly many of you could contribute items which would interest your classmates. — WALTER MCKAY, *Secretary*, Room 33-211, M.I.T., Cambridge 39, Mass.

1937

We try our best to keep track of where you all are at all times, but try as we will there are some who manage to elude us. Here are five fellows for whom we haven't had a good address in 10 years: Gaylord Parks; Sergeant James William Maddock of Belmont, Mass.; Fred Ame Barber of New York City; Private Lewis Allen Ebling of New Bedford, Mass.; and Munemichi Tonami of Tokyo, Japan. These fellows may have been dislocated by the war or may have been casualties. There are two others we would like to hear from or about: John LaMont Hegeman of Watertown, Mass., last heard from in Westport, Conn., in 1941; and Robert James Moffett of Queens, N.Y., last heard from in Alexandria, Va., in 1941. If any of you know anything about these seven men, let me know.

Our reunion is scheduled to start June 7 at The Belmont at West Harwich, Mass. I'm sure all of us can hardly believe it was 20 full years ago that we parted company to go our separate paths. From what we have all seen of each other, the fates have been very kind to us spiritually,

physically, and, in a materialistic way, I'm sure few of us can complain. I know that I, for one, want to get another look at the balding pates or graying locks — and the still smiling faces of you stalwarts. We who attended the 15th have fond memories of the few happy hours spent together renewing memories and filling in details of the intervening years. The reunion committee reports that to date 62 plan to come with their wives, and 9 or 10 plan to come alone. A few at the 15th planned their vacations for that time and stayed over at the hotel. Look into it; it has possibilities.

This year many of our children will be big enough to take along. We expect to bring our two girls — Beverly, 15, Cheryl, 13, and our son Thomas, 11. They should have a grand time! Let me know how many of you will do the same; perhaps we should organize some sort of a program for them. Come one, come all; children or no, we'll have a ball!

We just learned of the following bits of information: Charles R. Kahn, Jr., has been operating his air conditioning company since December 1954. It's called the Wyant Engineering Service Company and is located at 505 Fifth Avenue in New York. Colonel Hubert Lewis is Deputy Post Commander at Ft. Riley, Kans. As of May 1, 1956, Dr. Maurice E. Bell of 1146 Center Lane, State College, Pa., has been assistant dean for research and director of the Mineral Industries Experiment Station at Pennsylvania State University. He came from Sylvania Electric Products, where he was head of the Solid State Branch of their Physics Laboratory at Bayside, N.Y. We all wish all of you continued good fortune. The M.I.T. Club of Mexico City is having their Annual Fiesta, March 14, 15, and 16. Headquarters appear to be the University Club. Sounds like a grand time. If you can make it I'm sure you will have a rousing time.

George Wemple sent a tear sheet from *Chemical and Engineering News*. It is an advertisement for the Process Machinery Division of Superior Separator Corporation in Hopkins, Minn. Peeking out from the copy is Bill Burnett, Chief Engineer. Nice to see your smiling face again, Bill! John Fellouris has returned from his tour of duty in Greece, and is now living at 1290 Rockdale Avenue, New Bedford, Mass. W. Gardner Barker is now vice-president of Thomas J. Lipton, Inc., Hoboken, N.J. He lives on Andrews Road, Greenwich, Conn. Had a note from Win Comley: "I left Whitlock Manufacturing Company in Hartford, Conn., in 1953. Went to the Lummus Company and spent about three years in Paris and The Hague — then back to New York for one year. Am now at Honesdale, Pa., at our manufacturing plant in charge of product engineers — connected with design of heat exchangers and allied equipment."

His address now is c/o The Lummus Company, Honesdale, Pa. Some other new addresses: John J. Hanlon, 10 McGibbon Avenue, Amsterdam, N.Y.; Dr. Geof-Jen Su, 90 Clearview Drive, Pittsford, N.Y.; Robert E. de Raismes, Jr., 309 Crestridge Drive, Nashville, Tenn.; Rutherford Harris, 3662 Traynham Road, Shaker Heights 22, Ohio.

On to West Harwich in June! — WINTHROP A. JOHNS, *Secretary*, 766 Hyslip Avenue, Westfield, N.J.

1940

Tyler March, who has had consistent advancement at International Business Machines Corporation, has been appointed assistant director of Product Development. Previously he was the manager of Xerographic and Character Recognition Development in the I.B.M. Product Development Laboratory. Joe Owens is president of the American Machine Tool Distributors' Association.

One of the pleasures of the Christmas Season (which will be long past by the time this column is read) is in hearing from old friends and learning of their current activities. This past Christmas was made especially memorable by the Christmas message of Ray and Virginia Keyes, which is here reproduced in its entirety: "568 North K Street, Livermore, Calif.:

"Dear Friends: Have you ever imagined your feelings if you suddenly found yourself on the moon? You'd probably wonder if it was all really true. That is our feeling when we count. The two of us are now five. Courtney came in '53, Timmy in '54, and this year Gregory came Friday the 13th of April. What a gang of boys — husky, hearty, healthy, and happy. They all play together pretty well, with the newcomer meeting the pace as best he can on all fours. The personality patterns possess variety. Courtney is the executive type. He organizes the fun and play. Timmy is the quiet man who will do anything wanted of him as long as it's fun. Timmy once demonstrated great athletic prowess by jumping from Courtney's upper bunk. He also has shown great wisdom by not doing it again. Gregory is just a follower. His pleasure derives from watching brothers. Of course, being romped and tossed around by Daddy is the greatest fun for all the boys.

"About once a month we go to Berkeley to old haunts and friends. The boys enjoy this trip because we always see grandmother Keyes who still lives there. Grandmother has paused in her rug-making enterprise and now is no mean manufacturer of pottery of all kinds. And a mighty fine job she does! We are looking forward to some nice big mugs — you know — the kind that holds an honest cup of coffee. Our travels have been limited this year. For recreation we have picnicked locally. During the summer we often enjoyed a late afternoon swim (all, but Greg) at the Livermore Pool. Before long we expect our new stationwagon which should more adequately suit our growing family. With our new vehicle we hope to travel more, and in so doing, again see some of you. If not, we invite you to come see us. You're always welcome at our house, and even crowded as we are, we can still provide a lodging of a sort.

"As the year '56 passes into 'Time,' we are saddened by events in other places where some people have forgotten or have never learned the message that came with the first Christmas, and thereby many others have suffered. Our hearts go out to

them, especially this year, and we pray that a future Christmas may yet find a world where justice and fairness will prevail and the fellowship of men will be the order of the day. Whether we count our fellowship with you in decades or in days, we are always happy to say, 'Merry Christmas' from Ray, Virginia, Courtney, Timmy, and Gregory Keyes." — ALVIN GUTTAG, *Secretary*, Cushman, Darby and Cushman, American Security Building, Washington 5, D.C. SAMUEL A. GOLDBLITH, *Assistant Secretary*, Department of Food Technology, M.I.T., Cambridge 39, Mass. MARSHALL D. MCCUEN, *Assistant Secretary*, 4968 West 14th Street, Indianapolis, Ind.

1941

Reid Weedon writes: "Your column was a bit of a shock with regard to the mention of our four children." I can see why; it seems that each of Reid's two children had a companion the day we met. My apologies to the Weedons! Reid was just back from Puerto Rico when he wrote; he enclosed a write-up on the Educational Council, a group of about 700 Alumni (500 Educational Counselors and 200 Honorary Secretaries), whose responsibilities are to maintain active, friendly relations with specific secondary schools, and to interview prospective freshmen. We can all take pride in the fact that the Class of 1941 has the largest representation on the Council, and we congratulate those members of the Class who are giving their time and energies to this very worth-while activity.

A story from the New York *World-Telegram and Sun*, headlined "Missile Defense May Require Daring Patrol of Red Skies," brings us the following sobering thoughts: "Do we have a sure defense against the intercontinental ballistics missile, that deadly weapon of the future which may travel 10,000 miles an hour and be capable of wiping out entire cities? No, says Reserve Air Force Colonel Ted Walkowicz, Secretary to the first Defense Department Scientific Advisory Board." Writing for the magazine *Air Force*, Ted listed the two main reasons: (1) Defense of large areas, if it ever becomes technically feasible, may well prove economically impracticable; and (2) defense of strong points, if it ever becomes technically and economically practicable, may not come until after the Russians have an intercontinental ballistics missile.

"The race between this country and Russia to develop the first ICBM," he says, "is paralleled by an equally important but generally overlooked contest to develop the first defense against one." Any defense, he points out, depends on three elements: detection, interception, and the kill. "The best detection system would let us know where the Soviet ICBM launching sites are located so we could watch them." There are two possibilities; the first would be Soviet acceptance of President Eisenhower's "open sky" proposal. But precisely for that reason he thinks they won't accept, and this would unquestionably be true "if the Soviets are now ahead of us." The second is more daring: he proposes that we develop air-

craft "which are able to do the job and also are relatively invulnerable to enemy interception." In short, to patrol Russian skies whether they like it or not. Such aircraft, he added, "must possess endurance and the capability of outrunning and outfighting, if necessary, any Soviet interceptors which try to interfere."

On new jobs are Henry Bartlett, "... now working for Boeing Airplane Company as research engineer at Air Force Missile Test Base at Cape Canaveral, Fla.," and Lew Jester, who is senior application engineer in Industrial Machinery Engineering with General Electric in Schenectady. — IVOR W. COLLINS, *Secretary*, 28 Sherman Road, Wakefield, Mass. HENRY AVERY, *Assistant Secretary*, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1942

If the number of dues payers is any indication, it looks as if the last-minute reservations for our 15th Reunion are going to have to take potluck on rooms. With 165 men paid up by the end of the year, we now have enough funds to take care of reunion planning and publicity, and we have assurances of a capacity gathering of over 200 classmates and wives. Paul Hotte and Jack Sheetz assure me that the list of those who plan to come is included in the mailing piece that is about to go into your mail. By way of information, the pre-Reunion budget is for approximately \$500, and the week-end expenses chargeable to the registration fee are budgeted for approximately \$1,000. We heartily recommend your being with us on June 7 to 9 to enjoy the fun.

The old year was ushered out with a trip to Stowe, Vt., for skiing via New York (to leave Laurie with grandparents). The foggy drive southwest was very pleasantly interrupted by a dinner visit with Mark and Margie Kravitz. I was embarrassed to discover that eight years have gone by since I Polaroid-photographed Peter when he was one day old; that Ellen was born just before our fifth Reunion; and that Judith was born just after last spring's third New England blizzard — and not a word about any of them had appeared in these columns. Mark drowned my apologies in highballs and Margie smothered my regrets with lobster. On the business side, Mark is president of Markal Enterprises, specializing in canteen services for the itinerant workers in the Connecticut tobacco fields. In addition he handles purchasing and contracting for the Shade Tobacco Growers Association, a cooperative group that employs 1,300 laborers, mostly from Jamaica and Puerto Rico. Extending his house with new patios, making the patios into enclosed porches, and converting porches into additional rooms keeps Mark busy when not otherwise occupied with work or with the Lions' Club, of which he is a past president of the Manchester, Conn., group.

Along with Class dues came letters of intent from Donn Barber — still with Du Pont but at a better location in a better job — now living in Vienna, W. Va.; and from Bob Keating, newly arrived in Cot-

tage Hills, Ill. The Alan Katzensteins' plans are less definite because of a prior commitment with the stork for the end of May. Their first, Paul Alan, was two years old on December 16, and already "seems mechanically inclined in an analytical way; anything that can come apart or be torn apart appeals to him — also anything which moves." Alan is director of Food Technology for Foster D. Snell, Inc., of New York City. Foster D. Snell, Inc., are consulting chemists and engineers. We are hoping that Paul Alan's new playmate arrives early enough to permit his parents to join us at the Chatham Bars Inn.

P.S. The skiing was fine, but we found more snow and lower temperatures when we returned to Boston. — LOU ROSENBLUM, *Secretary*, Photon, Inc., 58 Charles Street, Cambridge 41, Mass.

1946

Take five from such mundane matters as income tax computations and read this latest chapter in the serialized history of '46ers. As mentioned in the previous chapter we have been swamped by questionnaire returns, the latest count being approximately 116, so those who delayed sending theirs in until December or later won't find theirs being used immediately, but don't despair — we will get around to them all as soon as possible.

Preston Parr has been an assistant director of Lehigh University's Institute of Research, but on September 1, 1956, he became associate dean of students. The Parrs live at R.D. No. 1, Bethlehem, Pa., and have three daughters; Caroline, Louise, and Elizabeth. For the past three years Preston has been editor of American Chemical Society's *Octagon* of the Lehigh Valley Section. Donald Burke has been with the M. K. M. Knitting Mills, Inc., in Manchester, N.H., for a number of years, recently moving up from production manager of the finishing department to his present job of sales coordinator, special accounts, ladies finest gauge, fully fashioned sweaters (plug). Don and Pat and their two boys and a girl live at 72 Bruce Road, Manchester, N.H. R. J. deFasselle is a partner in the firm of Heisterkamp and deFasselle, consulting engineers, in Cleveland, Ohio. The firm specializes in product and facility design in refrigeration and heating, working mostly with industrial clients. Bob is a registered professional engineer in Ohio, and is a member of A.S.M.E., A.S.R.E., and A.S.H.A.E., and has given several papers and talks for these organizations. Bob is also active in the Kiwanis. He and his wife and son live at 37710 Jordan Drive, Willoughby, Ohio.

Until September, 1954, Robert L. Jacks was a design engineer for Esso Standard Oil in Baton Rouge, but changed jobs at that time to become a project engineer for the M. W. Kellogg Company in New York. Bob is still single and lives at 6 Peter Cooper Road, Apt. 3F, New York 10, N.Y. Ray Brown is vice-president in charge of operations for the Eastern Steel Tank Corporation of Flushing, N.Y., and lives at 3 Ridgcrest East, Scarsdale, N.Y. Louis B. Wadel is supervisor of Systems Development Group, Chance Vought Air-

craft, Inc., Dallas, Texas. Louis' group is responsible for research into future weapon systems development. He has been with Chance Vought since 1948 and on the side has been teaching graduate courses in advanced servomechanisms at Southern Methodist University. He has been a member of the National Administrative Committee of I.R.E. Professional Groups on Electronic Computers and Automatic Control, and he was chairman of the 1956 National Simulation Conference. Louis and Carol and their two girls, Nancy and Catherine, live at 3905 Centenary Drive, Dallas 25, Texas. Leon G. Wilde is working on computer and servo systems for the Laboratory for Electronics in Boston. He and his wife and son live at 3 Chandler Circle, Andover, Mass. This should sound familiar to a number of readers — Leon says he has been building his own house for the past three years, and he expects to be finished in one more year.

James W. Bartlett received his medical degree from Johns Hopkins in 1952, and is now chief psychiatric resident at the Strong Memorial Hospital, University of Rochester School of Medicine and Dentistry. James, Nancy, and son John live at 308 University Park, Rochester 20, N.Y. Rick Adler is a naval architect with the Equitable Equipment Company, Inc., New Orleans. They build all types of small and medium sized vessels, such as tugs, barges, cargo vessels, oil well drilling tenders, etc., and Rick is involved in design, estimating, and negotiations. He has been with Equitable for the past six years with two years out, during which he was back in the Navy as resident supervisor of shipbuilding in Savannah, Ga. Rick was married in February, 1956, to the former Susan Cohen of New Orleans, and Bud and Laura Brylawski managed to make it from Washington for the wedding. The Adlers live at 7836 St. Charles Avenue, New Orleans 18, La. Joseph C. Bates is president of Bates Engineering Company, Sparta, Ill., contractors to various government agencies, Corps of Engineers, Air Force, for overhaul and rebuilding of equipment. Stanley F. Goldfein has his building construction offices at 19 West 44 Street, New York City, and lives at 159 Beach 149th Street, Neponsit, L.I., N.Y.

Colin A. Roberts is an underwriter for Manufacturers Mutual Fire Insurance Company. He underwrites insurance for large industrial risks throughout the United States and Canada. The Roberts have two boys and two girls and live at 50 Clarke Road, Barrington, R. I. Colin has been active in solving Barrington's school problems. He is chairman of the Barrington School Building Committee, supervising the design and construction of two 16-classroom elementary schools, and he has recently been elected to a four-year term on the Barrington School Committee.

The Maxwell J. Perrottas and their three girls also live in Barrington, R.I., at 170 Sowams Road. Maxwell now has his own patent law practice with offices at 85 Westminster Street, Providence, R.I., after having worked in the U.S. Patent Office in Washington, with Shoemaker

and Mattare in Washington, and for the patent department of Grinnell Corporation of Providence. He is chairman of the Industrial Action Committee of the Providence Junior Chamber of Commerce, and is a member of the Boston Patent Law Association, Rhode Island Bar Association, and the M.I.T. Club of Rhode Island. Weston W. Goodnow was operating superintendent for Sperry Rail Service in Danbury, Conn., in 1954 and 1955. He is now plant engineer for Wright-Manley Plant, American Chain and Cable company, York, Pa. He lives at F9 Country Club Manor, York, Pa., is secretary of the New York Chapter of SPEBSQSA, Inc., and is director of the York Chapter of the American Materials Handling Society. Theodore S. Church has been with the Sandia Corporation, Albuquerque, N.M., since May, 1947. Starting as an engineering aide, he has been a staff member, division supervisor, assistant department manager, and in 1955 was promoted to his present job of manager, Electronics Research Department, specializing in electronic systems for nuclear ordnance. Ted and Elizabeth have a son and a daughter and live at 1713 Inez Drive, N.E., Albuquerque, N.M.

Morris A. Chomitz is a project engineer with the Kuljian Corporation in Philadelphia, Pa. He is a registered professional engineer in Pennsylvania. The Chomitzs and their son and daughter live at 7213 Mansfield Avenue, Philadelphia 38, Pa. Stephan H. Crandall is an associate professor of mechanical engineering at M.I.T. He has been at M.I.T. since receiving his M.I.T. degrees, with one year out as a Fulbright scholar in England. He is the author of a book, *Engineering Analysis A Survey of Numerical Procedures*, McGraw-Hill, 1956, as well as many technical papers on numerical analysis. He and Pat have one daughter and they live on Tabor Hill Road, South Lincoln, Mass. Sheldon Hill has his own architectural business with offices at 179 Deerpath, and lives at 930 S. Greenbay, both in Lake Forest, Ill. Emerson H. Newton is an electrochemist for Arthur D. Little, Inc., Cambridge, Mass. He is a member of the Boston Branch of American Electroplating Society, the Boston Branch of the Electrochemical Society, and the National Association of Corrosion Engineers. The Newtons and their two daughters live at 39 Virginia Road, Arlington, Mass.

That's it for this month. We'll be back next month with lots more of the same.—JOHN A. MAYNARD, *Secretary*, 15 Cabot Street, Winchester, Mass.

1947

Enthusiasm for the Reunion continues to wax. Bob Bryant, who is recovering from a lengthy illness, writes that upon his imminent discharge from hospital and return to work "I shall be overjoyed to send the \$10 requested in your letter of last September; not only that, I shall also be looking forward to being with you at the Reunion." Parker Symmes enclosed his dues with a newsy note: "I just found your letter of September 23, 1956, tucked away in a desk drawer, and I thought I had better not keep you in the dark any

longer. I intend to be at the Reunion next June with my wife, Jane. I think you met her briefly one night at the Opera House. We just received a new addition to our family, a son, named Frederick Russell Symmes.

"Our engineering company (Vappi and Symmes, Engineers of Cambridge) has been in business for about 18 months. We specialize in designing industrial buildings. Through our association with the construction firm of Vappi and Company, Inc., we can provide the design and construction in one complete package. We have several buildings presently going up on or near Route 128. I understand that the Hotel Curtis is a fine place for reunions, so all we need now is a good turnout."

Carroll and Hazel Andrews recently moved from the Lincoln Laboratories to International Business Machines in Poughkeepsie. Hazel writes: "Been all this time getting a roof, address, etc. We finally bought a very nice little home—a three-bedroom, one-storey house, white clapboard exterior with blue shutters, attached garage. It's not far from Vassar. Think you'll be by to visit us any time soon? Andy is busily engaged in his circuit development at I.B.M. I must unearth the Reunion literature. Seems it arrived the day we left Billerica. In the meantime you're always welcome at 5 Valley View Road, Poughkeepsie."

Virginia (Ferguson) Hildebrand sent her dues with the letter: "I'm a bit slow in replying to your Class letter, but the excuse is a good one—at least we think so. We have a new little daughter, Susan, who was born in the middle of September. Bruce and David are as delighted to have a little sister as we are to have a daughter. Bob ('45) is still at Boeing, and awfully busy as usual, though still enjoying his work as much as ever. His present assignment is heading the power plants preliminary design group. My technical abilities at the moment are confined to the kitchen and fooling around a bit with photography. We incorporated a darkroom in our new home to keep me occupied in my 'spare' moments. I manage to keep the grandparents supplied with pictures of the children, and, at the present, that is just about all. The Reunion plans sound wonderful—I hope a rousing good time is had by all. I hope some day to get back to an Alumni Banquet, but at the moment Bob is the only traveler in the family."

Christmas greetings arrived from Bob and Jen Warner, whose Palo Alto residence makes their attendance at the Reunion as unlikely as the Hildebrands' from Seattle. I did get a card from Pete and Bobby Portmann—and Bruce, Brian and Claire—from Washington, and I'm hoping it won't take much persuasion to get them up to Lenox in June. Dick and Doris Scheuing, living on Long Island, are likely prospects, although they haven't committed themselves as yet—probably looking for a sitter for 15-month-old Rick—but fellow bachelor Art Schwartz is a sure bet. He only has to drive up from East Orange, N.J. In closing, we have one note of professional importance. John Tome, a Course V graduate, who later

took an M.S. and Ph.D. from Pennsylvania State University, has been appointed to direct market research activities for the General Electric Company's Materials Department in Pittsfield.—CLAUDE W. BRENNER, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass.

1949

We regret we must report that a tragic automobile accident last August 26 took the life of our fellow classmate, Bruce Bailey. Bruce was killed instantly when his MG overturned as he was attempting to avoid another car which had failed to heed a stop sign. The other driver left the scene of the accident. At the time of his death, Bruce was the senior partner in B and B Engineering Associates—his own electronics company located in Concord, N.H. Bruce's wife, Shirley, was kind enough to write about the accident, and her letter ended as follows: "[Bruce] . . . had a grand time setting up this electronics business of his own, and had reached the point where contracts were coming in and his first product, a power transistor thermometer, was selling in great volume. His life may have been short, but he accomplished a great deal more than many men who are fortunate to live to old age."

Bill Atkinson is now chief, Machinery Arrangement Section at Electric Boat Company. He recently presented a paper entitled "The Arranging of Machinery Spaces in Modern Submarines" to the New England Society of Naval Architects and Marine Engineers. He has also recently given speeches on Nuclear Physics and the A-Bomb to the Yale University A.S.M.E. and the Westerly (R.I.) Y.M.C.A. Bates C. Burnell, now a major in the Army, recently graduated from the Command and General Staff College at Fort Leavenworth, Kansas. Major Burnell is one of 621 United States and Allied officers completing the regular 10-month course at the Army's senior tactical school.

Pete Cambourelis is continuing his work with Rem-Cru Titanium, Inc., the firm jointly owned by Remington Arms Company and Crucible Steel Company of America. Pete has been transferred to New York City to establish Rem-Cru's new New York sales office. Dennis Carney has been appointed superintendent of No. 2 Open Hearth at U.S. Steel's South Works in Chicago. His previous positions at U.S. Steel include physicist, general supervisor—Metals Research, chief development metallurgist, and superintendent of No. 2 Electric Furnace Shop. Carl Clark has returned to work for Hamilton Standard Division of United Aircraft. Carl left National Airlines in April 1956 and, after two months in Hartford, returned to St. Petersburg, Fla., as an assistant project engineer at the new Hamilton Standard plant there. Randy Cleworth is now covering the Akron-Columbus area in Ohio as a sales engineer for the Link-Belt Company. The Cleworths were pleased to announce the birth of David Randall last April.

Stanley Collis is currently working as a statistical quality control engineer for Alcoa in Lafayette, Ind. Dave Dudley and

Barbara Allen of Augusta, Ga., were married last November. They are now living in Cranford, N.J. Bill Estes has left Boeing Aircraft and last October opened an office for Manpower, Inc., in Wichita, Kan. Manpower, Inc., is a nationwide organization which supplies temporary help to other businesses during periods of peak activity. Dave Hardin has been appointed a vice-president at Market Facts, Inc., a consulting firm in Chicago, Ill. Dave has been with Market Facts since he received his M.B.A. from the University of Chicago. Tom Hilton has accepted a teaching-research position at Carnegie Institute of Technology. Tom is an assistant professor in the Department of Psychology, while his research activities will be connected with C.I.T.'s School of Industrial Administration. Tom was awarded his Ph.D. at Harvard in February 1956.

Chuck and Shirley Holzwarth report a busy year in 1956. Their third child, Gregory Sommer, arrived March 18. In the early fall they spent four days at the Republican National Convention in San Francisco. Another high light of the year was a trip to Mexico in the late fall. They visited Mexico City for two days and then flew south to Yucatan peninsula where they spent several days investigating the Mayan ruins. From Yucatan they flew to Acapulco, then returned to Mexico City via Taxco and Cuernavaca. Chuck is continuing his work with Owens-Corning Fiberglas where he is now responsible for both market research and pricing in 11 western states.

Ed Kerwin presented a paper entitled "Near Noise Field of Rotating Propellers" at the International Congress on Acoustics last June. Also in June the Kerwins added a son, Michael William, to their family. Ed is also co-author of a paper, "Some Experiments in Unsteady Aerodynamics." Bob Krudener has taken up sailing with the Star fleet at Gull Lake, Mich. During his first season of sailing, he placed fourth in the Michigan Championship Regatta held on Lake Michigan. Harry Lang is presently working as sales manager for Industrial Products at Airborne Instrument Laboratories, Mineola, N.Y. Harry left Boonton Radio Corporation in 1954 to attend Harvard Business School where he graduated in June 1956. Bill Millick is now supervisor of the engineering and development group at the Mansfield, Mass., plant of Hercules Powder Company.

John Rhodes has been appointed sales manager, laboratory instruments for the Instrument Division of Perkin-Elmer Corporation, Norwalk, Conn. He has been associated with Perkin-Elmer since 1952 when he joined the company as a sales engineer. Dr. Clarence Schultz has joined the faculty of the School of Engineering at the University of Connecticut. He was formerly director of microwave research for the J. B. Seeburg Company in Chicago. Earl Smith is currently working toward his Ph.D. degree in electrical engineering at California Institute of Technology.

Donald Sparrow was recently named manager of a newly-created pioneering research section at Scott Paper Company

in Chester, Pa. Don joined Scott in 1949 as a research chemist. He became pulp group leader the following year and was pulp research manager prior to his new appointment. Chuck Sutherland is now Eastern regional sales manager for Aladdin Radio Industries. The Sutherlands first child, Laura Ann, arrived last August. Kemon Taschioglou is now industrial sales promotion manager for the Polaroid Corporation. Kemon's major responsibility will be supervision of the Polaroid Land Projection Film sales program. This film is used in regular Polaroid Land cameras and produces black-and-white transparency slides, ready for projection, in 60 seconds. Kemon has been with Polaroid since 1953, and has his M.B.A. from Harvard Business School.

Vincent Valleroy has left the University of Kansas and is now working for the Research Department of Carter Oil Company in Tulsa, Okla. Bill Wilson is now working for Curtiss-Wright at their plant in New Jersey. A new daughter, Janet Leslie, joined the Wilson's household last October. Gene Woodward recently left his job as metallurgist with Kew McGee Oil Company to join the Technical Service and Development Department of Dow Chemical in Midland, Mich. Your secretary is proud to report the nearly simultaneous addition of a second son, David Allen, and a new home both in late October. (Note: the baby was three weeks early.) — O. SUMMERS HAGERMAN, JR., Secretary, 8519 Pringle Drive, Cincinnati 31, Ohio.

1955

Christmas is grand. We catch up with all sorts of lost souls. Pete Seagle wrote from Germany, where he and Don Evans are still holding down the fort, as did Warren Lattot, who, with Charlotte, is serving his duty in Kaiserslautern. From the other side of the globe, Jack Dixon sends word that he plans to return from Korea to the States this spring and to finish up his duty in September. Barbara Rogers Petree, who added that last name last summer, is now in Baton Rouge. Bob Morgan is back in Grosse Pointe and is working with the Edsel Division of Ford after a jaunt to Europe upon finishing up at Devens. And right in the Lanier back yard, so to speak, at Columbia are Phil Eisner, Ed Remler, and Burt Kleinman. Phil and Ed have been engrossed in graduate study in physics since leaving Tech and are research assistants at Columbia. Burt is studying applied mathematics. This trio is living together on Riverside Drive and is apparently not suffering.

The big news this month (no weddings!) is that future sons and daughters of M.I.T. are cropping up all around. A "Pilot Study on Parenthood," by Marilyn and Dave Nasatir presented the facts on their daughter, Gail, who arrived early in December. A "Report of Assay and Analysis from the U. S. Geobabological Survey" formally gave the characteristics of the heir apparent of Dave and Toby Brooks, but a letter from Dave, written 18 hours after the arrival on December 8, really got across the emotional aspect of the event.

Don Billstone also writes of the birth of a daughter last July, just prior to his commissioning in the Civil Engineering Corps of the Navy. Don is now stationed on Guam as a project manager for the Public Works Center for the next 18 months.

A very nice letter was received from Walter Shifrin. After getting his S.M. in Course XI last June, Walt went into the U.S. Public Health Service as a sanitary engineering officer. He is now stationed in Kansas City, Mo. An interesting few hours were enjoyed by your male correspondent in partaking of the fine cuisine and conversation of Elden Reilly at his apartment just across the street from the Law School. We had a grand time chatting about old times and old friends, and so forth and so on.

That about winds it up for this month. Do drop us a line—please! — DELL F. LANIER, Secretary, 54 W. 71st Street, New York 23, N.Y. L. DENNIS SHAPIRO, Assistant Secretary, Room 10-185, M.I.T., Cambridge, Mass.

1956

A couple of issues ago I requested Tony Turrissi to give us some critiques of current New York plays. Well, about two weeks ago I found that Mr. Turrissi had left his New Jersey abode to work for his rich Uncle Sammy. Presently our young hero is eating the Chemical Corps commissary out of house and home. The ever-increasing number of our Class members entering the service seems to have also affected the marital rate. There was a spurt around the Christmas holidays, and there were a few who ran to the altar before donning the uniform, but as more and more bachelors enter the service they seem to stay that way for awhile. Unfortunately, Uncle Sam will decrease the number of the Class able to attend Alumni Day this June, so the remaining few should make a special effort to give some representation.

To contrast with the normal, humanities have been stressed in current press releases at Tech. A philosophy professor, whose specialty is religion, has been appointed. A recent survey taken at colleges in the Boston area shows the number of admitted agnostics and atheists to be declining as the number of college chapels increases. Technology religious leaders have contributed generously to the survey. The Institute has received a large grant for the study of improvements in secondary school science education.

T. Guy Spencer of our Class executive committee became engaged to Leslie Harriet Bendslev of Wellesley during the Texas Thanksgiving holidays. William Grinker, now a lieutenant at Fort Lee, will marry Ilene Ruth Wasserman of Brookline in the summer of 1957.

The theme for the sermon for this month is your part in the Alumni Association. In this first year out of college many of us are doing our best to forget the last four years and the school attached to that period. We are centering our attention on our future in the business world. Yet, those four years will probably prove to

be the most formative of your life. Many of the acquaintances you made, and the reputation you gained from the school will reappear often in the future. Although an alumni association is thought of as primarily a fund-raising organization, it has many more functions. Being attached to the Association here at Tech, you have a wonderful chance to aid your country and your own future security by working with the Educational Council in searching for future scientists. As the newest class we are probably in the best position to understand the questions of those currently in secondary schools and, therefore, we can be valuable in guiding them to Tech. From an employment standpoint, a record of being loyal to your school is an indication to your boss that this loyalty

could also encompass your company and so be a factor in considering you for promotion. The Alumni club of your local area will introduce you to many new friends in the Tech family as well as being a place to renew old acquaintances and keep in touch in general.

The President's Report for 1956 gave an excellent recapitulation of the year and outlined many important plans for the future. A recent Alumni Association folder listed many honors showered on Alumni in the past year, and I wish to add to this list. I nominate the Class of 1956 as being the most sales resistant. Although the number keeping in touch is increasing, I have received information on only one Class member outside North America. Thank you, Mr. Gubbay.

It would so help if you Romeos would send me a copy of the announcement of your engagement, wedding, birth of your child, etc. As it is, the Alumni Association, The Technology Review, and I have to employ our own version of the F.B.I. and C.I.A. to read half the newspapers in the country and correspond with your girl's best friends.

Adding to 1956, the Boston weather bureau has announced that last year set an eleven-year record in snowfall — 72.6 inches. And even worse, this year seems to be starting the same way. Note to future freshmen: bring snowshoes! — BRUCE B. BREDEHOFT, *Secretary*, 1528 Dial Court, Springfield, Ill. M. PHILIP BRYDEN, *Assistant Secretary*, 3512 Shutter Street, Montreal, Quebec, Canada.

We suggest you make your plans

NOW

to attend Alumni Day Conference and Reunion on

Monday, June 10, 1957

Once again all events will be held at

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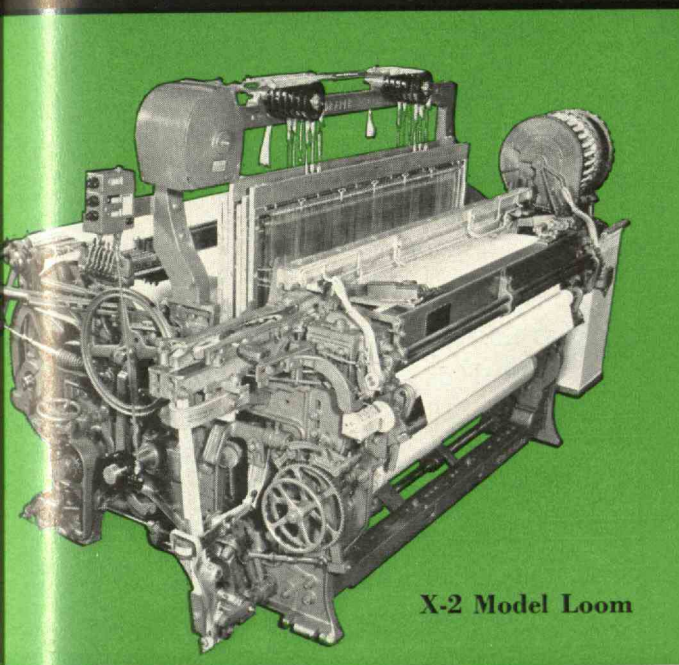
Present plans call for:

1. A morning conference — to be held on a subject identified with the physical sciences
2. Ceremonies — during which the Karl Taylor Compton Laboratories of Electronics and Nuclear Science will be dedicated
3. Trips — through the nuclear reactor building, to see the reactor under construction
4. Luncheon — with President Killian in Du Pont Court
5. Alumni Banquet — to be held in Rockwell Cage
6. Evening entertainment — with Arthur Fiedler, and the Boston Pops Orchestra, offering a program that is sure to please Alumni, their ladies, and their families, in the Kresge Auditorium

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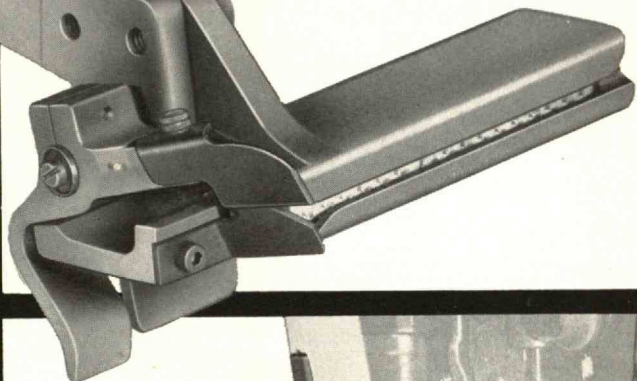


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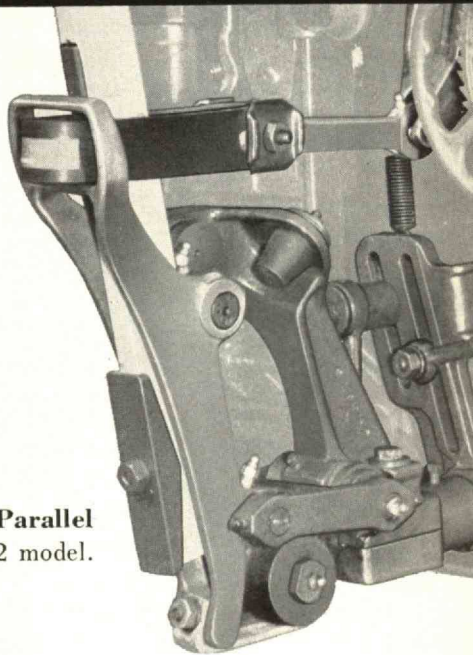


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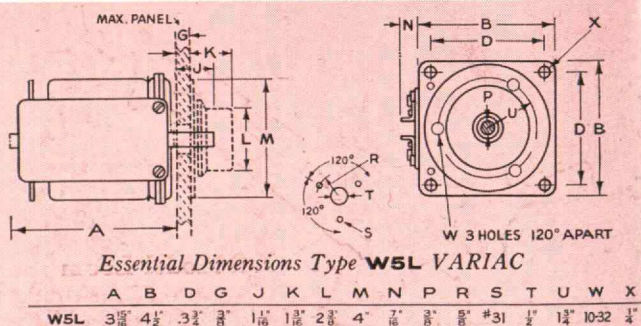
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